# Sewer System Management Plan

City of Lincoln

March 2016

# Table of Content



**Appendices**

# Element I. Introduction

***City of Lincoln Sewer System Management Plan (SSMP) Mission Statement:***

*The City of Lincoln plans, develops and manages sanitary sewer projects and programs to safeguard public health and property. It is in the best interest of the City to establish goals that are specific, measurable, attainable, relevant and trackable or referred to as* ***S.M.A.R.T.***

## Section 1.1 Purpose

To facilitate proper operations, funding and management of sanitary sewer systems, the City has developed a system-specific Sewer System Management Plan (SSMP). The purpose of the SSMP is to establish goals for implementing the various procedures and programs that will allow the City of Lincoln (City) to meet the regulations of the General Waste Discharge Requirements (GWDR) 2006-003 Order. In addition, the development of these procedures and programs will help assist the City to effectively manage the Wastewater Division and improve customer service. Unless otherwise noted the Midwestern Placer Regional Sewer Pipeline (Regional Pipeline) extending from the North Auburn Sewer Maintenance District (SMD 1) Pump station to the intersection of Highway 193 and Sierra College Boulevard, is covered by the goals and procedures in this SSMP.

## Section 1.2 Goals

The goals that have been established in order to accomplish the above mentioned objectives are as follows:

- Minimize sewer system overflows and prevent public health hazards;
- Prevent or limit damage to public and private property;
- Perform operations in a safe and professional manner;
- Effectively manage the City's sewer infrastructure; and
- Develop procedures and practices that are cost effective and provide a high level of customer service.

This plan was designed to assist in the development of these goals and to meet the regulations. Each of these goals shall be measured for effectiveness.

# Element II. Organization

## Section 2.1 Organization

The organizational chart in Exhibit 2.1 depicts the Organizational Lines of authority for the City of Lincoln. Exhibit 2.1 also identifies The Legally Responsible Official (LRO) that has been designated by the City for all reporting requirements. The roles and responsibilities, with respect to the SSMP, of the parties listed in Exhibit 2.1 are described below.

**The City Council** establishes policy based on the needs and desires of the Citizens.

**The City Manager** carries out the policies and programs of the City as directed by the City Council. All City services are under the direction of the City Manager.

**The Public Services Department** is responsible for maintaining public services for the City, including the collection system.

**The Maintenance Services Manager** manages field operations and maintenance activities for the city collection system. This includes investigating and reporting SSOs, as well as heading emergency response procedures.

**The Wastewater Division** is responsible for the maintenance of the wastewater treatment and reclamation facility (WWTRF). The WWTRF staff manage field operations and maintenance activities for the Midwestern Placer Regional Sewer Pipeline (Regional Pipeline). This includes investigating SSOs and heading emergency response procedures for the Regional Pipeline.

**The Community Development Department and the City Engineer** are responsible for developing and enforcing collection system design standards for new and existing development.

**The City Police Department** receives and directs calls for SSOs during after-hours.

**Exhibit 2.1 Organizational Chart**

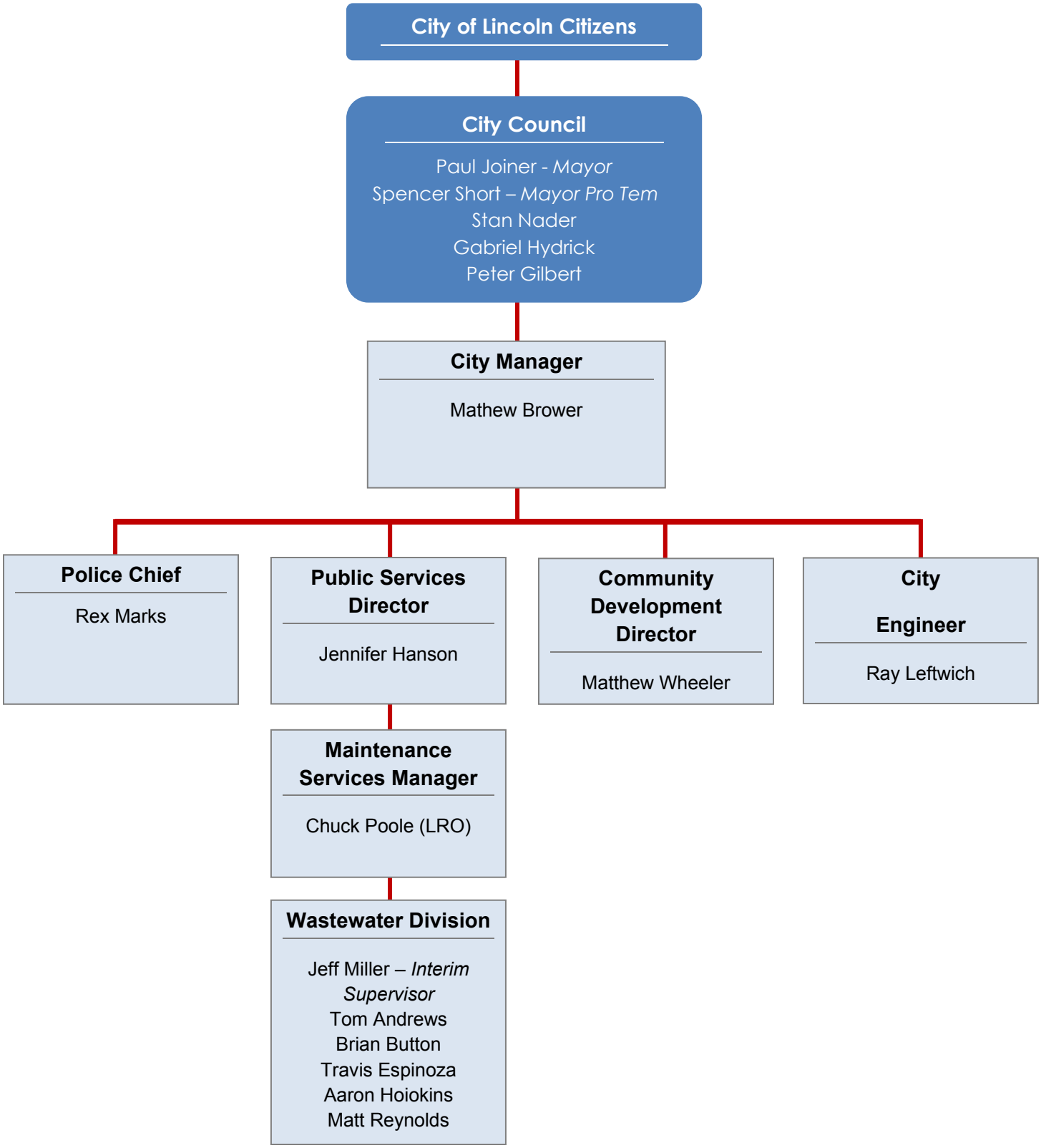


**Exhibit 2.2 SSO Chain of Communication**

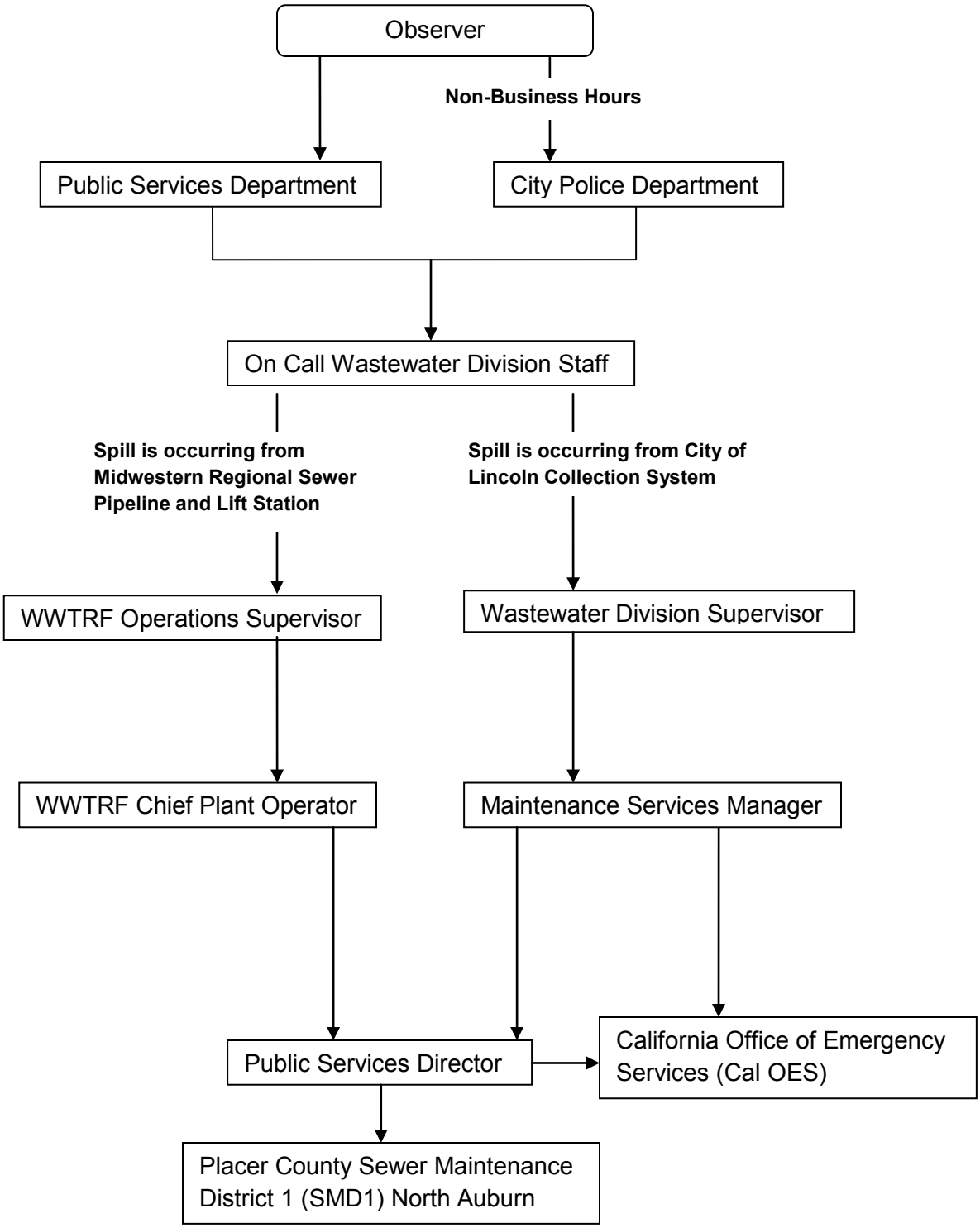


**Exhibit 2.3 SSMP Contact Information**

| Contact | Phone Number |
|---|---|
| Public Services Department | (916) 434-2450 |
| Lincoln Police Department | (916) 645-4040 |
| City Council Members | (916) 434-2490 |
| City Manager | (916) 434-2490 |
| Public Services Director | (916) 434-2450 |
| Maintenance Services Manager | (916) 434-2450 |
| WWTRF Chief Plant Operator | (916) 540-6591 |
| WWTRF Operations Supervisor | (916) 826-3203 |
| Placer County Sewer Services Emergency Line | (530) 889-7515 |
| California Office of Emergency Services (Cal OES) | 1-800-852-7550 |

# Element III - Legal Authority

## Section 3.1 City's Legal Responsibilities

General Waste Discharge Requirement (GWDR) 2006-003 Order states that each enrollee (City) must demonstrate through the use of Municipal Codes, service agreements or other legally binding procedures that the City possesses the necessary legal authority to:

- Prevent illicit discharges into the sanitary sewer system;
- Require proper design and construction of sewers and connections;
- Ensure access for maintenance, repair and inspections;
- Limit the discharge of fats, oils and grease (FOG) and other debris to prevent sanitary sewer overflow (SSO's); and
- Enforce violations of the City's sewer municipal codes.

## Section 3.2 Review and Comparison of Regulations and Municipal Codes

The City's existing Sewer Use Ordinance included as **Appendix 1**, has been reviewed and compared with GWDR Order 2006-0003. The conclusions are as follows:

1. "Legal authority to prohibit discharges to the system and identify measures to prevent SSO's and blockages caused by FOG."

   ***Findings*:** The City's existing sewer ordinance authorizes the City to prohibit discharges. Specifically ordinances 13.08.330, 13.08.340, 13.08.350, and 13.08.360 address illegal discharges.

2. "Require that sewers and connections be properly designed and constructed".

   ***Findings*:** Existing ordinances 13.08.510, 13.08.520, 13.04.530, 13.08.540, 13.08.550, 13.08.560, 13.08.570, 13.08.580, 13.08.590, and 13.08.600 provide sufficient authority to the City to require that sewers and connections are properly designed and constructed.

3. "Authority to access and inspect public facilities and perform maintenance."

   ***Findings:*** Existing ordinance 13.08.620 allows access by City staff to perform inspections and maintenance as needed.

4. "Legal authority to prohibit discharges to the system and identify measures to prevent SSO's and blockages caused by FOG."

   ***Findings:*** Existing ordinance 13.08.360 authorizes the City to prohibit discharges of FOG and other debris that may cause SSO's. Ordinance 13.08.370 describes the City's ability to require the installation of Grease and Oil interceptors.

5. "Enforcement of the Sewer Use Municipal Codes."

   ***Findings*:** Existing ordinance 13.08.680, 13.08.690, and 13.08.700 provides the City with adequate legal authority to enforce the Sewer Use Ordinance. The City's Sewer Use Municipal Codes provide for enforcement authority by the Public Works Director, the City Engineer and/or his designee. For this purpose the Public Works Operations Manager acts as the City representative to determine the necessity for enforcement and to notify the City of Lincoln code enforcement officer and/or the Placer County Health Department when improper or illegal discharge is occurring.

## Section 3.3 Legal Authority of Midwestern Placer Regional Sewer Pipeline

The Midwestern Placer Regional Pipeline (Regional Pipeline) is maintained and operated by the City; however, the City does not have the legal authority to regulate discharges to the Regional Pipeline from the SMD1 pump station. Legal authority for the Regional Pipeline is described in the Construction, Operations and Joint Exercise of Powers Agreement (COJA) between Placer County and the City of Lincoln signed in 2013. The portion of the COJA that describes authority over operation of the Regional Pipeline is included in chapter 5 of the COJA.

# Element IV. Operation and Maintenance Program

## Section 4.1 Overview

This section of the Sewer System Management Plan (SSMP) provides an overview off the City's Operation and Maintenance (O&M) Program. Currently the City has approximately 220 miles of sanitary sewer lines ranging in size from 4 inches to 66 inches in diameter to maintain. The Midwestern Placer Regional Sewer Pipeline (Regional Pipeline), which the City also maintains, has approximately 12.3 miles of pipeline. The Public Services Department implements an O&M Program that meets the City's needs and fulfills the O&M Element requirements in the General Waste Discharge Requirements (GWDR) 2006-0003 Order.

## Section 4.2 Collections Systems Mapping

The GWDR 2006-0003 Order requires the SSMP to maintain an up-to-date map of the sanitary sewer system indicating all gravity line segments and manholes; pumping facilities; pressure pipes and valves; and applicable stormwater conveyance facilities**.** The City is utilizing Geographic Information System (GIS) mapping software and GPS units, which are coordinate base systems, to maintain up to date maps of its collection system and appurtenant facilities. The GIS mapping software has a high degree of accuracy with survey grade GPS coordinates and produces quality coordinate based maps.

The handheld GPS unit used by Public Works Wastewater Division staff is accurate to within 3 meters for locating manholes and other collection system structures. In addition, a survey grade GPS unit was purchased for logging in new construction work performed by field staff. These GPS units will help our staff to maintain the accuracy of the information electronically entered into the GIS system. Data collection efforts include but are not limited to: sanitary sewer overflows (SSOs); flow metering devices, hot spots, and grease interceptors.

Data is collected and entered into the State of California Integrated Water Quality System (CIWQS) electronic reporting system database and mapped using GIS. In conjunction with the CIWQS data, a facility map

software database is used that includes pipe size, manhole numbers, upstream and downstream manhole numbers, flushing branches/cleanouts and other important system information. This allows for easy access viewing by field staff through internet access on a laptop or desktop computers. The GIS software also allows field staff to add "as-built" plan information to the database that is later reviewed and updated by the City's GIS technicians and the Public Works Operations Manager.

The City also maintains an up-to-date map of the Regional Pipeline showing all gravity line segments, pumping facilities, pressure pipes and valves.

## Section 4.3 Preventive Maintenance

It is the City's responsibility to provide routine preventive maintenance to the system. This SSMP describes routine preventative operation and maintenance activities conducted by the Public Works Wastewater Division staff and contractors. The O&M Program currently has a system in place for regular scheduled maintenance and cleaning of the sanitary sewer systems. Staff document all preventive maintenance activities using work orders.

The preventative maintenance system currently in use by the City prioritizes maintenance activities. The Wastewater Division's goal is to reduce sanitary sewer overflows (SSO's) by cleaning all mainlines in the City every three (3) years. In addition, staff have targeted recurring problem areas with more frequent and enhanced maintenance efforts.

The City's cleaning and maintenance efforts for mainlines are prioritized based on slope, pipe type, pipe age, condition of pipe (i.e. defects), previous blockages, and the risk assessment for SSO's. The primary source of pipe blockages are roots and grease buildup. The preventive maintenance tasks include hydrocleaning, mechanical rodding, closed-circuit television (CCTV) inspections of mains and laterals, root foaming and manhole inspections. Additional tasks include smoke testing, dye testing and flow metering to discover sources of inflow and infiltration (I&I). The Public Works Operations Manager periodically reviews work schedules and data collected with staff to prioritize preventive maintenance activities and schedule repairs.

The areas identified for enhanced maintenance are inspected and cleaned every ninety (90) days. Some problem areas that pose high risk of SSO's are cleaned monthly. Maintenance areas are designated on a map and are color coded for scheduled maintenance periods. The primary cleaning method used is hydroflushing at

approximately 1,800 to 2,000 PSI. When roots are occluding pipes, root foaming or mechanical root cutting equipment may be used.

Manhole inspections and I&I investigations are performed during cleaning efforts, as staff is available. An inspection sheet is completed with the GIS number of the manhole; evidence of I&I is documented; inlet and outlet pipe sizes identified; bench condition; frame/lid type and condition are noted. Manholes identified for repairs are documented and re-evaluated to determine the type of rehabilitation necessary.

Service laterals are inspected on a case by case basis when a resident call regarding a problem or when there is evidence of rock, debris, roots or I&I having entered the mainline.

The results and effectiveness of these tasks and inspections will help determine future maintenance needs; the level of maintenance required; corrective repairs; Capital Improvement Projects (CIPs); and help to reduce SSO's.

## Section 4.5 Documentation and Work Orders

Staff use a computerized maintenance management system (CMMS) to log customer requests and issue work orders based on customer complaint received by Public Works Department. The CMMS is used for tracking customer service requests and can be used to query for reports based on: customer name, address, and type of problem. Work orders are created from the database and assigned to the Public Works Wastewater Division staff for response. Staff assigned to a work order is responsible for closing out the work order/request with proper resolution and a status update. Additional information such as man-hours and type(s) of equipment used can be documented and tracked for budgeting purposes. After-hours complaints/problems are logged by hand on an emergency call-out form by the on-call staff and logged into the database on the following work day by staff.

Emergency calls during regular working hours for SSO's are dispatched immediately by cell phone or radio to the Public Works Wastewater Division staff in accordance with the Overflow Emergency Response Plan in Element VI. After-hours and weekend complaints/problems are routed to the Lincoln Police Department and dispatched to the on-call staff by pager and/or cell phone. After staff have responded and resolved the issue the on-call staff complete and file a report. The next business day, the report is entered into the database by administrative staff. A sample of the customer request form and work order requests are depicted in **Exhibits 4-1 and 4-2**.

## Section 4.6 Rehabilitation and Replacement

The GWDR 2006-0003 requires the SSMP to "develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and CCTV inspections of manholes and sewer pipes; and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally the rehabilitation and replacement plan shall include a Capital Improvement Plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule to implement the short- and long-term plans plus a schedule for developing the funds required for the capital improvement plan."

The City has been proactively replacing and repairing deteriorated mainlines and service laterals for many years. In the 2007-2008 fiscal year a Capital Improvement Program was initiated to provide funds for collection system rehabilitation. The projects to be funded out of this program include: sewer main replacement; trenchless rehabilitation; pump station upgrades; and installation of a SCADA monitoring system. An up to date Capital Improvement Plan is included as **Appendix 2**.

Public Works Wastewater Division staff has purchased Cured-in-Place point repair equipment and can perform trenchless point repairs on 6-inch to 10-inch pipes, in house, as needed. Condition assessment is on-going with CCTV inspections, manhole inspections, service lateral inspections, cleaning/flushing logs, and the hydraulic capacity information being created by outside consultants. CCTV inspections utilize Pipeline Assessment and Certification Program (PACP) rating criteria to establish uniform priority ranking of infrastructure conditions.

All repair and replacement projects for the Regional Pipeline will be determined and implemented as described in section 5 of the COJA between the City and Placer County.

## Section 4.7 Staff Training

As part of the SSMP, staff and contractors shall be appropriately trained on a regular basis for sanitary sewer system operations and maintenance as required by the GWDR 2006-0003 Order. Historically the City has budgeted sufficient funds for staff training. Future years will require review of required continuing education, as well as, safety training needs. Staff training includes skilled and technical training and certification through various organizations such as: the California Water Environment Association, Network Environmental Systems, Inc., National Association of Sewer Service Companies, and other agencies/resources. In addition, there is mandated safety training as required by Cal-OSHA, the National Institute of Safety and Health and all applicable federal regulations.

Currently the Wastewater Division Staff and Maintenance Services Manager are adequately trained in the following areas:

- Condition assessment using PACP;
- First Aid /CPR;
- Confined Space Entry (OSHA);
- Trench Safety/Competent Person (OSHA); and
- First Responder Hazardous Materials/Spill Response Handling.

Contractors shall provide documentation of their experience and training in writing prior to commencing work in the City's sewer systems as part of an encroachment permit application.

## Section 4.8 Contingency Equipment and Replacement Inventories

The GWDR 2006-0003 Order requires the SSMP to provide equipment and replacement part inventories, including identification of critical replacement parts. The City's inventory includes standby pumps, hoses, generators, and special repair fittings. Critical equipment is determined by the Public Works Operations Manager. The inventory components are based on the system section, the component failure rate, and the greatest potential public health and safety risk. The inventory tracking database is helpful to locate and track inventory.

The City has made informal agreements with local vendors to provide emergency equipment and also to allow the City to place equipment on "standby" within their equipment yards in order to ensure availability of critical equipment during regional events.

The Wastewater Division currently has the following for equipment needs:

- 2 light towers fixed with 6KW generators for night work;
- 3-25KW portable generators;
- 2 2-inch pumps with 500 feet of discharge hose;
- An off-road utility vehicle for access to manholes in open space and remote locations;
- An 8-inch and 6-inch diesel-driven portable pump with suction and discharge hose;
- A 4-inch portable trash pump;
- 1 backhoe;
- 1 dump truck;
- 1 skid steer loader/backhoe; and
- 2 Vactor combination hydro trucks.

## Section 4.9 Conclusion

The Public Works Operations Manager and Wastewater Division staff have sufficient experience, training, tools and equipment to maintain the collection system and will continue to review and adjust procedures to apply best management practices and industry standards utilizing its existing database and with the use of benchmarks and data from the California Water Environment Association CWEA and other agencies. Adequate staffing is a concern when considering emergency response to spills, pump station repairs and rotation for weekly on-call and weather-related events to allow for vacation leave and avoid fatigue.

Budgeting for repairs and equipment will continue to be a challenge during the current economic times. Staff will focus on ways to best utilize existing manpower and equipment to accomplish the goals established. It is important that the City allocate appropriate staff time for documentation and reporting, and budget for assistance from consultants on an "as-needed" basis for GIS data, updates of mapping, hydraulic capacity, and modeling data.

Compliance with all the tasks identified in the SSMP "Operations ands Maintenance Program" Element has been ongoing for some time with the City's existing procedures being continually reviewed and formalized. New procedures are drafted and incorporated, as needed. As part of the SSMP Audit process, these procedures will be reviewed to identify any improvements in safety, efficiently and cost effective measures.

# Exhibit 4-1

# Exhibit 4-1

## *Request Detail Report*

*2:22 PM*

**Request #:** 09-001433 **Status:** New Request **As Of:** 6/2/2009 2:27 PM

**Requestor**

| | | | |
|---|---|---|---|
| **Phone Number:** | 645-2351 | **Util Acct #:** | |
| **Name:** | Nick | **Business:** | |
| **Address:** | 506 I ST | | |
| **X Street:** | | | |
| **City, State Zip:** | Lincoln CA 95648 | | |
| **Country:** | USA | **Parcel:** | |
| **Building Type:** | | **Email:** | |
| **Home Phone:** | | **Work Phone:** | |
| **Phone 1:** | | **Phone 2:** | |

| | | | |
|---|---|---|---|
| **Category:** | Wastewater | **Follow-up Date:** | |
| **Problem:** | Sewer Stoppage | | |
| **Cause:** | | | |
| **Priority:** | High | **Facility:** | |
| **Address:** | 506 I ST | | |
| **Address2:** | | | |
| **Gen Location:** | | | |
| **City:** | Lincoln | **Parcel Number:** | |
| **State:** | CA | **Zip Code:** 95648 | **Country:** USA |
| **Department:** | Sewer | **Building Type:** | |
| **Supervisor:** | Doyle Champlain | **Location X:** | |
| **Affected Utility:** | | **Location Y:** | |

**Scripts**

Q)

**Information for Work Order**

6/2/09 1:20 p.m. Sewer blockage at City cleanout / roots. City has snaked in the past, everything OK for two years, now customer thinks the roots have grown back. Backup in the bathroom as well. D to Danny B. & e-mailed him. ym

| | | | |
|---|---|---|---|
| **WO User 1:** | | **WO User 4:** | **WO User 6:** ☐ |
| **WO User 2:** | | **WO User 12:** | **WO User 7:** ☐ |
| **WO User 3:** | | **WO User 13:** | **WO User 8:** ☐ |
| **WO User 16:** | | **WO User 23:** | **WO User 26:** ☐ |
| **WO User 17:** | | **WO User 24:** | **WO User 27:** ☐ |
| **WO User 18:** | | **WO User 9:** | **WO User 28:** ☐ |
| **WO User 19:** | | **WO User 10:** | **WO User 29:** ☐ |
| **WO User 20:** | | **WO User 11:** | **WO User 30:** ☐ |
| **WO User 21:** | | **WO User 25 Date:** | |
| **WO User 5:** | | **WO User 15:** | |
| **WO User 14:** | | **WO User 22:** | |

**Notifications**

| Initiated By | Date | Time | Agency | Contact | Purpose |
|---|---|---|---|---|---|

**Recorded By:** YMC **Recorded On:** 6/2/2009 2:27 PM

**Requestors**

| Date | Name | Address | Home Phone | Work Phone |
|---|---|---|---|---|
| 6/2/2009 | Nick | 506 I ST | | |

**Linked Requests**

| Request # | Status | Category | Problem | Cause |
|---|---|---|---|---|

# Exhibit 4-2

# Exhibit 4-2

## *Work Order Detail Report*

**WO Number: 09-001472** **Status: New Work Order** **5/18/2009 9:17 AM**

**Category:** Wastewater
**Problem:** Sewer Stoppage
**Cause:** Uunknown
**Main Task:** Clear Stoppage
**Assigned Crew:** Sewer crew
**Supervisor:** Doyle Champlain
**Lead Worker:** Danny Bisiar
**Priority:** High
**Account #:**
**Proj No - Acct:**
**Project:**
**Reason:**
**Department:** Public Works
**Division:** wastewater
**Sub-Division:**
**Area:** Public Works operations
**Sub-Area:**
**Owner:** Private
**Location:**
**Classification:**

**Request Comments for Work Order**
CCTV city cleanout.

**Assigned By:** 5020 Danny Bisiar
**Assigned Date:** 5/18/2009 9:00 AM
**Start Date:** 5/18/2009 9:30 AM
**End Date:** 5/18/2009 10:00 PM
**Odometer:**
**Hourmeter:**
**Other Meter:**

**Comments for Crew**
CCTV to determine problem.DB

**Work Order Locations**

| Address | Address 2 | X Coord | Y Coord | General Location |
|---|---|---|---|---|
| 1275 LARKFLOWER WY | | | | |

**Work Order Assets**

| System ID 1 | Description 1 | System ID 2 | Description 2 | Completed |
|---|---|---|---|---|

**Check List**

| Item | Completed | Condition |
|---|---|---|
| | ☑ | |

**Tasks/Resourses**

**Crew:** ***Task Cost:**
**Supervisor:** **Start Date:** **End Date:**

| Resource | Time Type Reg | OT | Normal Type | Total Time | Units | *Total Cost |
|---|---|---|---|---|---|---|
| | | | | | | |

**Projected Complete:** 5/18/2009 9:30 AM
**Repair Type:**
**Subcontractor:**
**Profit Center:**

**Quantity:** 0.00
**Unit of Measure:** Each
***Unit Cost:** $ 0.00
**WO Hours:** 0.00

| | *Actual | *Estimated | *Difference |
|---|---|---|---|
| WO Duration | 0.52 | 0.00 | 0.00 |
| Labor Hours | 0.00 | 0.00 | 0.00 |
| Labor Costs | 0.00 | 0.00 | 0.00 |
| Parts Costs | 0.00 | 0.00 | 0.00 |
| Fluids Costs | 0.00 | 0.00 | 0.00 |
| Equipment Costs | 0.00 | 0.00 | 0.00 |
| Contractor Costs | 0.00 | 0.00 | 0.00 |
| Misc. Costs | 0.00 | 0.00 | 0.00 |
| **Total Costs** | **0.00** | **0.00** | **0.00** |

* A gray field indicates permission to view the secured field is turned off.

# Element V. Design and Performance Provisions

## Section 5.1 Overview

It is the City's responsibility to have design and performance provisions for new and existing sanitary sewer systems. These provisions are reflected in the City's Public Facilities Improvement Standards. Detailed standards are essential to ensure construction material and methods comply with best management practices within the industry, meet requirements of building and construction codes accepted by the State and other agencies, and meet the ASTM and "Greenbook" standards.

## Section 5.2 Design, Construction Standards and Specifications

The SSMP shall identify design standards, construction standards, and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems. Design standards provide the enforcement authority to ensure the City receive a quality product from contractors and developers. The City has current design, construction standards and specifications for the installation and repair of water, sewer and storm drain systems as well as streets, sidewalks and other infrastructure. The City adopted its' current Public Facilities Improvement Standards in 2004, and they are available on the City's website at www.ci.lincoln.ca.us. Section 5 of these standards addresses the installation and repair of sanitary sewer infrastructure. Design standards for the Midwestern Placer Regional Sewer Pipeline are described in the design drawings developed for project construction.

## Section 5.3 Standards for Inspecting and Testing New, Rehabilitated and Repaired Facilities

The SSMP shall identify the procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances; and for rehabilitation and repair projects. The standards are as follows:

1. The City has a requirement for all new sewers to be air tested and a closed circuit television (CCTV) inspection be performed. City

inspectors work with the contractor and developer to make sure they perform these tests correctly and work is documented by the City staff. CCTV video is often reviewed by Public Works Wastewater Division staff to make sure damaged pipe is not accepted.

2. All new manholes shall pass a vacuum test of 10 inches of mercury for 60 seconds to ensure manholes do not allow inflow and infiltration (I&I) into the existing sewer system.

3. Rehabilitated and repaired pipe sections and manholes are inspected by the Public Works Wastewater Division staff using City owned CCTV equipment. The criteria for determining satisfactory compliance are determined by using the Pipeline Assessment Certification Program (PACP) and the Manhole Assessment & Certification Program (MACP). The Maintenance Services Manager, Public Services Director, and/or City Engineer will determine what is acceptable for workmanship, methods and materials for rehabilitation and repair work that are not described in the standards.

## Section 5.4 Conclusion

PACP and MACP were developed by NASSCO and the Water Research Center (WRC); and are used throughout the world as standard criteria for ranking pipe conditions and structural defects. Most sewer agencies now use these criteria for developing standardized inspections and specifications for contractual work and Capital Improvement Projects (CIP).

The City has trained and certified its Public Works Wastewater Division staff on how to be CCTV operators and to use the PACP. Training staff in theses areas ensure they are qualified to perform inspections and determine proper rating for the system defects observed.

The City's Public Facilities Improvement Standards are currently adequate to ensure the City has a good design and installation standards for contractors and developers to follow. The standards ensure the residents of the City a well built sewer system that is not high in maintenance and is cost effective.

# Element VI. Overflow Emergency Response Plan

## Section 6.1 Overview

An Overflow Emergency Response Plan (OERP) provides a standardized course of action to be followed by collection system personnel during a sanitary sewer overflow (SSO) event. An up-to-date OERP is necessary to ensure that a municipality is adequately prepared to respond to an SSO event. The OERP should describe protocols for the response, remediation, and notification of an SSO event under varying scenarios.

The basis for using pre-planned procedures in response to SSOs is to ensure that all responses are handled efficiently, effectively, and that all regulatory requirements are met, with the ultimate goal of avoiding and/or minimizing the threat to public health from potential exposure to untreated sewage.

The OERP should identify measures to protect the public health and the environment from a broad range of potential collection system failures that could lead to an SSO. The OERP should also include procedures to mitigate the effects of an SSO, when they do occur. To ensure successful implementation of the OERP during an SSO, appropriate staff and contractors should have adequate training.

The City has developed an OERP, and it is presented here. The goal of the OERP is to minimize the volume of sewer overflows that enter waters of the State (i.e., surface water), minimize the adverse effects on water quality and beneficial uses, and to protect public health. Additionally, this plan will ensure that sanitary sewer overflows are properly identified, responded to and reported to the appropriate regulatory agencies as required by the General Waste Discharge Requirements (WDR), Order 2006-0003 DWQ (the Order) and amendments.

## Section 6.2 Organization of Plan

The key elements of this plan are addressed individually as follows:

Section 6.3 Overflow Response Procedure
Section 6.4 Regulatory Agency and Public Advisory Notification Procedures
Section 6.5 Training Procedures
Section 6.6 Damage Assessment and Clean-up Procedures
Section 6.7 Conclusion

## Section 6.3 Overflow Response Procedure

The Overflow Response Procedure presents a strategy for the Public Works Wastewater Division staff to mobilize labor, materials, tools and equipment to correct or repair any condition, which may cause or contribute to an unpermitted discharge. The plan considers a wide range of potential system failures that could create an overflow to surface waters, land or buildings.

Receipt of Information Regarding Sanitary Sewer Overflow (SSO): A SSO may be detected by City employees or by others. The City is responsible to act based on received phone calls or reports on possible sewage overflow from the wastewater collection system; and to provide immediate response to investigate and/or correct a reported sewer overflow.

Generally, telephone calls from the public reporting possible sewer overflows are received at the Public Works office at (916) 434-2450. After hours, telephone calls are directed to the City of Lincoln Police Department at 916-645-4040. The following information is collected by the telephone operator:

1. The telephone operator obtains all relevant information available regarding the overflow including:

    a. Time and date telephone call was received;

    b. Specific location of the overflow;

    c. Description of problem;

    d. Time possible overflow was noticed by the caller;

    e. Caller's name and phone number;

    f. Observations of the caller; and

    g. Other relevant information that will enable City staff to determine how to quickly locate, assess and stop the overflow.

Dispatch of Responder(s): The telephone operator records initial information in log or complaint database and dispatches Public Works Wastewater Division staff immediately. The dispatcher shall give responder all information received from witness. Dispatcher shall make verbal contact with responder—a voice message will not be acceptable.

Response by City Staff: The Public Works Wastewater Division staff will respond to the scene and confirm the overflow. Until verified, the report of a possible spill will not be referred to as a "sewer overflow." The responsible staff observes the spill and contacts immediate supervisor and others as needed. Other Public Works staff may be used to assist. Once the source of the spill is identified, every available means will be used to stop and/or limit the damage, and contain the overflow if possible. Caution and care shall be used to not further the damage of the property, the environment, and risk safety of public or staff.

Priority of Effort: The priority of work when responding to an overflow should always be as follows:

1. Stop the overflow
2. Contain the spill
3. Protect public health
4. Repair the system
5. Clean up the SSO
6. Document and report the spill

Spill Response and Containment: Initiate measures to contain the overflowing sewage and recover where possible, sewage which has already been discharged, minimizing impact to public health or the environment. Immediate response includes the steps listed below in order of decreasing priority. However, judgment must be used in determining which steps to take first in each particular SSO event. For example, if a simple containment berm would stop the spread of the SSO or prevent it from entering a water body, containment may be a higher priority than immediately trying to stop the SSO.

1. **Control Traffic** as needed to immediately protect the public and maintenance staff responding to the SSO. Immediate traffic control is needed if there is a street collapse, significant depression in the pavement (due to sewer line), a manhole is ajar, or if the overflow causes flooding of the street. Traffic control may also be needed to prevent wastewater from being further disbursed and to protect the maintenance crew while containing the overflow and removing the blockage.

   Consider the following when implementing a traffic control plan:

   a. Provide traffic control per Caltrans standards; and
   b. If necessary, contact the City of Lincoln Police Department to ensure proper traffic control.

2. **Determine the current magnitude and immediate destination** of the overflow, e.g. storm drain, street curb gutter, body of water, stream bed, etc.;

3. Identify and **request the necessary materials** and equipment to contain or isolate the overflow, if not readily available.

4. Take immediate steps to **contain and stop the overflow.** Contain or divert sewage whenever possible to prevent entry into a body of water or environmentally sensitive area. Block or bag storm drains, or recover with a vacuum truck. Determine if bypass pumping is feasible. If so, staff shall divert flow around the blockage to a downstream manhole. If the overflow is downstream of a wastewater pump station and there is an overflow line within the pump station, the pump must be shut down until the overflow is repaired.

    a. Additional measures shall be implemented under potentially prolonged overflow conditions. In the event of a prolonged sewer line blockage or a sewer line collapse, set-up a portable by-pass pumping operation around the obstruction.
    b. Take appropriate measures to determine the proper size and number of pumps required to effectively handle the sewage flow.
    c. Implement continuous or periodic monitoring of the by-pass pumping operation, as required.

5. **Correct the cause of the overflow**. In areas with flat terrain, the cause of the overflow may be located a considerable distance from the actual overflow. During large storms, overflows may occur because of excessive inflow and infiltration (I/I) into the sewer system. I/I can greatly increase the flow in the collection system and cause overflows in pipes that are only partially blocked by roots, grease, or debris. However, during large storms, I/I can cause the flow in the collection system to exceed the hydraulic capacity of the pipes and pump stations. Under these conditions, it may not be possible to stop the overflow until the flows recede. If a measurable rainfall event has passed within 72 hours of the overflow, the intensity and duration of the rainfall event will be noted on the SSO Worksheet for assessment purposes of the line in question.

6. **Estimate the final volume** of the SSO. Coordinate with the first responder to determine the final overflow volume. This volume is recorded on the SSO Worksheet, which is to be included in the final report to regulatory agencies and included in the City's records. Estimates of the final overflow rate and total

overflow volume can be estimated using one of the methods found in **Appendix 3**.

7. **Initiate cleanup.** Disinfection of contaminated soil or drainage ways will be performed as directed by the appropriate agencies (i.e., Environmental Health Dept., Dept. of Fish and Game). Cleaning of spills occurring in environmentally sensitive areas can, in some cases, cause more damage than good. Call the Department of Environmental Resources for further instructions in these cases. Additional damage assessment and cleanup procedures are discussed in section 6.5 below.

8. **Restore operations.** Any sewer lift station or storm drain pump station must be placed back online after sewer flow is restored.

9. **Sample receiving water.** When an overflow discharges to surface water at least three (3) samples should be collected: At the point of discharge; 100 feet upstream of the spill; and 100 feet downstream of the spill. More samples may be necessary based on the spill conditions and other criteria. When in doubt, take additional samples 200 feet upstream and 200 feet downstream. If other streams are influencing samples take additional samples, as needed. Be specific on the locations of the sample by relating the sample point to a permanent feature or structure. Document the sample locations in writing and with photographs. This information must be given to the first responder or Maintenance Services Manager for reporting.

Documentation, Records and reporting: Pictures, samples, recorded time of events, weather conditions and any other measurable data or observations should be recorded as soon as reasonably possible. Statements from witnesses, residents and others involved will help establish credible records of discharge volume and response activities for reporting purposes. For any Category 1 SSO greater than 1000 gallons that results in discharge to surface water, or that may result in a discharge to surface water, the City is required to contact the California Office of Emergency Services (Cal OES) **no later than 2 hours after the SSO is discovered**, as long as notification is possible and will not impede cleanup or other emergency measures. Cal OES will request specific information such as:

1. Name of person notifying Cal OES and a direct return phone number

2. Estimated SSO volume discharged

3. Estimated discharge rate
4. SSO incident description
    a. Brief narrative
    b. On-scene point of contact for additional information
    c. Date and time the City became aware of the SSO.
    d. SSO cause
5. Indication of whether SSO is contained
6. Indication of whether surface water is impacted
7. Name of surface water impacted by the SSO
8. Indication of whether drinking water supply is impacted
9. Any other known impacts
10. SSO incident location

**Be prepared to provide this information.** Following the initial notification to Cal OES until the SSO report is certified on the CIWQS online SSO database, Cal OES will be updated regarding any substantial changes to the estimated volume of discharge. Additional reporting information will be required depending on the severity of the overflow as described below.

## Section 6.4 Regulatory Agency and Public Advisory Notification Procedures

This section contains the reporting requirements as outlined in the Monitoring and Reporting portion of the Order and procedures the Supervisor (Data Submitter) and/or Legally Responsible Official (LRO) must take to ensure the proper regulatory agencies are contacted within the time frames outlined within the Order. This section is written in a way that allows the LRO to go directly to the Section corresponding to the type of spill (Category 1, 2, 3 or Private Lateral Sewage Discharge) and follow a stepwise procedure through to final reporting.

The Order requires all SSO reports to be submitted to an online SSO database. The database is the California Integrated Water Quality System (CIWQS). SSO reporting deadlines vary depending on the type of spill and are further described below. It should be noted that during months which the collection system does not experience any spills, a "No Spill Certification" is required to be reported in CIWQS within 30 days

after the end of the month. In the event that the database is not available, the City is required to fax or email all the requested information to the appropriate Regional Water Quality Control Board office within the required timeframes. In such an event, the enrollee must also enter all required information into the CIWQS database when it becomes available.

The Order establishes four SSO Categories and their reporting requirements, as defined below:

**Category 1:** A Category 1 spill is defined as all discharges of sewage resulting in a failure in the sanitary sewer system that:

- **Discharges to surface water;**
- **Discharges to a drainage channel and/or surface water; or**
- **Discharges to a storm drain that are not fully captured and returned to the sanitary sewer system;**

The Maintenance Services Manager and/or the Public Services Director shall be notified when a Category 1 Spill occurs. They will make determination based on field information what level of notification is required. No information or reports will be provided to the media without prior approval of the Maintenance Services Manager, the Public Services Director and/or the City Manager. The Public Services Director and/or Maintenance Services Manager will report to the City Manager and/or the City Council on status of emergency operations. Staff may need to notify other agencies, water districts and users. If a recreational area has been impacted, the area will be closed and signage shall be posted warning residents of a potential health threat.

Notification and Reporting timeframe:

1. Verbal Notification: to OES **within 2 hours** of becoming aware of the discharge
2. Initial Reporting: draft report to be submitted to the CIWQS Online SSO Database within **3 business days**
3. Final Report: to be certified through the CIWQS Online SSO Database within **15 calendar days**
4. Technical Report: to be submitted through the CIWQS Online SSO Database within **45 calendar days** of the SSO end date for any SSO in which 50,000 gallons or more are spilled to surface waters.

**Category 2**: A Category 2 spill is defined as all discharges of sewage resulting from a failure in the collection system that:

- **Equals or exceeds 1,000 gallons or greater, and does not reach surface water, a drainage channel, or a storm drain system (unless the entire SSO discharged to the storm drain is fully recovered)**

Notification and Reporting timeframe:

1. Initial Reporting: draft report to be submitted to the CIWQS Online SSO Database within **3 business days**

2. Final Report: to be certified through the CIWQS Online SSO Database within **15 calendar days**

**Category 3**: A Category 3 spill is defined as all other discharges of sewage resulting from a failure of the collection system.

Notification and Reporting timeframe:

1. Final Reporting: certified report to be submitted to the CIWQS Online SSO Database within **30 calendar days** of the end of the month in which the SSO occurred

**Private Lateral Sewage Discharge (PLSD)**: Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

Notification and Reporting timeframe:

1. Reporting: Reporting is optional but strongly encouraged if discharge equals or exceeds 1,000 gallons and results in a discharge to surface water.

Before a report is certified in the CIWQS online Database and as additional information becomes available (i.e., laboratory data), updates should be provided to Cal OES and submitted as soon as possible. SSO reporting should also be made available to local agencies and individuals as the situation dictates. Individuals, departments, and agencies that require reports or that may need to be considered are as follows:

- Internal Managers: Public Services Director, City Manager, and Assistant City Manager.
- Police Department: Roadblock, traffic control, etc.
- Public Services Division: Close areas such as parks, shopping centers, etc.
- Local residents and businesses that may be impacted.

Additional information may be added to a certified SSO report within 120 calendar days after the SSO end date by amending the report or by adding an attachment to the SSO report in the CIWQS Online SSO Database. After 120 days justification of why

the additional information was not available must be submitted to the SSO Program Manager to request to amend an SSO report.

## Section 6.5 Damage Assessment and Clean-up Procedures

Damage Assessment**:** As soon as the spill has been stopped and immediate notifications have been made, an assessment of damages shall be made to private and public property, as well as any damaging effects to the nearby environment. The Public Works Wastewater staff will perform a "*reasonable assessment*" of the situation knowing that the City and/or others could face liability for any damages that may be determined. It is best to use estimations until further investigation can determine actual costs and damage.

Private property access must be granted by the property owner or resident. In some cases access to the property shall take place to stop or limit the damage; and if contact cannot be made with owner/resident access will be determined by the Maintenance Services Manager or Public Services Director on a case by case basis. When access is limited or denied, photographs or video shall be used to document the affected area of the spill.

Mitigation and Cleanup: A plan of action to mitigate and or cleanup the overflow shall be reviewed with the Supervisor prior to start of work to ensure that no further damage is caused and that proper safety and health precautions are being utilized. Whenever possible digital photos should be taken of the area before and after cleanup.

Clean sewer overflow sites thoroughly after an overflow. Where practical, thoroughly flush the area and clean up any sewage or wash-down water. Solids and debris are to be flushed, swept, raked, picked-up, and transported for proper disposal. No readily identified residue (e.g., sewage solids, papers, rags, plastics, and rubber products) are to remain at the site.

The Wastewater Division Supervisor, the Maintenance Services Manager or the Public Services Director shall visit the site and help determine best management practices (BMPs) to be used for this work. If spill has been contained then pumping into sanitary sewer should be performed using proper equipment and good judgment so as to not create a blockage in that sewer line. Monitoring shall be performed of manhours, equipment used and volume of pumping, etc. Make sure fuel and other contaminants used in pumps, vehicles, generators, etc. do not spill or leak into the affected area and create another hazard.

Cleanup and mitigation should also be documented with pictures, sketches and any other means of capturing the setup and staging of the work and site conditions. Straw waddles, oil booms, absorbent socks, granular absorbent, berming/diking and other means may be used to capture/contain the spill and for temporary storage for pumping operations.

Should any other contaminant or suspicious odor be detected (e.g., gasoline) not common to the sewer system, City staff shall immediately contact the Maintenance Services Manager or Public Services Director to report findings and get direction before taking further action.

Follow Up: As soon as possible and after the event, an action meeting shall be held with all involved staff to determine what further actions shall be taken for notification, public information, reports to agencies, mitigation/cleanup and preventative measures to keep future spills from occurring.

This meeting and discussion shall be documented and kept as part of the spill file. Public health and safety shall be determined and further investigation may be necessary.

## Section 6.6 Training Procedures

All City Staff receive trained in the Overflow Emergency Response Procedures. All new hires receive OERP training, and refresher training is provided as needed.

## Section 6.7 Conclusion

This Overflow Emergency Response Plan gives City personnel a plan to follow in order to protect public health and the environment; satisfy regulatory agencies and waste discharge permit requirements; and to minimize the risk of enforcement actions against the City. These goals are accomplished by using effective Response Procedures, Public Advisory and Regulatory Agency Notification Procedures, and Damage Assessment and Clean-up Procedures.

# Element VII. Fats, Oils and Grease (FOG) Program

## Section 7.1 Overview

This section of the Sewer System Management Program (SSMP) discusses the City's Fats, Oils and Grease (FOG) control measures, including the identification of problem areas, focused cleaning and source control. This section meets the City's needs and fulfills the FOG Control Program Element requirement in the General Waste Discharge Requirement 2006-0003 Order (GWDR).

## Section 7.2 Program Description

The GWDR requires each enrollee (City) to evaluate its service area to determine whether a FOG control program is needed. If an enrollee determines that a FOG program is not needed, the enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged into the sanitary sewer system.

## Section 7.3 Background

The City has evaluated its service area and determined that a FOG Control Program was needed. Many of the elements required are already in place as part of the City's routine sewer system maintenance. The City has determined that the existing Municipal Code was adequate to provide the authority to inspect grease producing facilities and to prohibit discharges as covered in the GWDR. There may be revisions of the Municipal Code in the future to address specific fees, fines and other elements of enforcement as it relates to this program and the overall industrial pretreatment program as it is further developed.

On August 28, 2006, the Governor of California approved AB 1333. The bill makes the improper disposal of brown grease from grease traps or interceptors an offense. In addition, the bill prohibits reinserting any of the grease removed from a trap or interceptor back into the trap or interceptor (decanting) unless specific conditions are met. The bill also

requires grease haulers to completely remove all grease, greasy liquids, water, and solids from a trap or interceptor each time it is pumped. The City also has a Franchise Hauler agreement requirement for vendors/contractors providing solid and liquid waste hauling services. This requires that haulers be registered and enter into contractual agreement with the City prior to providing service to any establishment.

In compliance with AB 1333, the Franchise haulers agreement, the GWDR, the City's Municipal Code, and a FOG Program has been established and implemented. The following activities have been implemented by the City:

- In November of 2007 the City began development of a SSMP, as required under the GWDR. This plan is necessary to avoid sanitary sewer overflows (SSO's) and a specific element of the plan is reducing FOG from the sewer collection system.
- The City has also conducted a survey of the restaurants and other commercial businesses to discuss the best management practices for cleaning of traps/interceptors and also proper disposal of the grease.
- The City participates in the Live Sewer Smart campaign in partnership with other regional utilities. The program educates residents about the importance of reducing the amount of FOG in the coolection system. As part of this program the City provides free residential container pickup for FOG. (http://www.livesewersmart.com/)

The City of Lincoln does not regulate FOG in the Regional Pipeline. A description of the FOG program implemented by the North Auburn Sewer Maintenance District 1 (SMD 1) can be found in the SSMP for SMD 1, which is available on the placer county website. http://www.placer.ca.gov/departments/facility/environmental-engineering/sewer/sewer-system-management-plan

## Section 7.4 Elements of the FOG Program

The GWDR consists of six (6) elements related to FOG control as follows:

- Public education and outreach implementation plan and schedule;
- Legal authority to prohibit illegal discharges, FOG blockages, and prevent SSO's;
- Require installation of grease removal devices and a means to standardize their installation;
- Authority to inspect grease-producing facilities and enforce noncompliant facilities;
- Identify system locations subject to FOG blockages and establish maintenance schedules; and
- Develop and implement source control measures for all FOG discharged to the sanitary sewer system.

## Section 7.5 Public Education

The new GWDR requires an implementation plan and schedule for public education and outreach for proper disposal of FOG. The public education component consists of developing a plan and implementation schedule for FOG control public education and outreach. During the spring cleanup on May 9th 2009 a Water Education Foundation (WEF) FOG brochure was handed to each resident that attends as a public outreach effort.

In 2007, staff began developing a pamphlet available to the public at the front counter of Public Works Department describing the problems of dumping residential cooking grease down the drain. On September 10, 2007, staff sent out packets to all commercial businesses informing them of the City's upcoming Grease Control Program and asking for their cooperation in a wastewater discharge survey. The City has reviewed and compared public outreach efforts and Municipal Codes with the GWDR. The conclusions are as follows:

1. *"A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area."*

   ***Findings***: Survey results were reviewed and follow up was performed with business owners to identify process and practices. A waste hauler franchise agreement was implemented approving a scheduled maintenance provider to provide "pump-out" reports. Septic haulers must be approved under chapter 8.06.

2. *"Legal authority to prohibit discharges to the system and identify measures to prevent SSO's and blockages caused by FOG."*

   ***Findings***: Existing ordinance 13.08.360.

3. "*Requirement to install grease traps/devices, design standards for the removal of devices, maintenance requirements, BMP requirements, record keeping and reporting requirements*".

   ***Findings***: Existing ordinance 13.08.370, 13.08400 and 13.04.350.

4. "*Authority to enforce, inspect and have adequate staff. The enrollee shall have sufficient staff to inspect and enforce the FOG ordinance*."

***Findings***: Existing ordinance 13.08.620. Sufficient staffing to perform these tasks will require approximately 700 additional manhours of time for the Public Works Wastewater Division staff. Inspections for the FOG requirements have already been implemented and are conducted annually. Random inspections will be performed as needed or as pump-out reports identify.

## Section 7.6 Implementation

The implementation of the FOG Program is a critical element for approval of the overall SSMP and the City has been implementing this program since June 2, 2009. Recently, the City hired a consultant to survey 310 businesses operating in the City. This survey was needed to identify businesses that are currently discharging FOG to the sanitary sewer system. Staff has categorized their responses and created a database file.

At this time, the City has two Septic Franchise Debris Haulers that meet the requirements to dispose of FOG at authorized locations. The City has also worked with the haulers to comply with the City's existing Municipal Code. In addition, local FOG producers will have safe and effective haulers to service their businesses. It is important to note that these two haulers are paying to be part of this program.

City staff currently receive pump-out reports from some of the businesses through voluntarily compliance. These records are part of the documentation required under the SSMP. Mandatory compliance may be necessary for the program to be completely successful and to meet the goals established in the SSMP.

City Staff have identified high maintenance areas through response phone calls and CCTV inspections. A schedule has been developed for cleaning out FOG and debris on a regular basis. Business owners that have recurring problems and do not control their discharges may be subject to fines and/or "Notice of Violation" that can result in revoking of their business license; Placer County Department of Health citation; and/or the closure of the business for health reasons.

The Maintenance Services Manager has overall responsibility for the program implementation and management. For the program to be effective Operations, Engineering and Code Enforcement staff shall be utilized as needed.

## Section 7.7 Compliance and Liability

If FOG is not controlled, the City could reasonably expect to be subject to State fines or lawsuits from non-government organizations (NGOs) or from private citizens. The State

Regional Water Quality Control Board requires that the City have "*Legally Responsible Officials*" for SSO reporting and compliance with all wastewater issues. The Public Services Director is the legally responsible officer (LRO) for the City and shall certify all reports and compliance with the discharge orders under penalty of perjury. This includes reporting requirements using the California Integrated Water Quality System CIWQS database.

Other consequences of not controlling FOG are increased maintenance costs and possibly additional construction costs to ultimately correct FOG related problems. These higher than necessary costs could result in higher user fees for sewer customers.

## Section 7.8 Conclusion

The City is currently implementing the FOG Program to meet the overall goals of the SSMP and the GWDR's requirements. The City will continue to look for ways to promote and expand the public outreach/information of proper FOG disposal.

# Element VIII. System Evaluation and Capacity Assurance Plan

## Section 8.1 Overview

The General Waste Discharge Requirements (GWDR) require the enrollee (City) to prepare and implement a Capital Improvement Program (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as, the appropriate design storm or wet weather event. Part of the CIP is an ongoing System Evaluation and Capacity Assurance Plan (SECAP).

## Section 8.2 Plan Description

At a minimum, the plan shall include:

1. Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to a sanitary sewer overflow (SSO) discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSO's that escape the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events.

2. Design Criteria: Where design criteria does not exist or are deficient, undertake the evaluation identified in (1) above to establish appropriate design criteria;

3. Capacity Enhancement Measures**:** The steps needed to establish a short-and long-term CIP to identified hydraulic deficiencies; including prioritization, alternative analysis, and schedules. The program may include capacity and storage facilities. It will also include an implementation schedule and shall identify sources of funding.

4. Schedule: The enrollee shall develop a schedule of completion dates for all portions of the CIP developed in (1)-(3) above. This schedule shall be reviewed and updated to be consistent with the Sewer System Management Plan (SSMP).

## Section 8.3 Sewer System Evaluations and Projects Implemented

The City has had a sewer system evaluation and CIP ongoing for many years. A system evaluation is ongoing using closed-circuit television (CCTV) information, manhole inspections and I&I testing to determine future CIPs projects and system upgrades. The City currently utilizes 4 ISCO flowmeters and various metering manholes with Palmer-Bowlus flumes to perform periodic flow evaluations. Public Works Wastewater Division staff and contractors perform hydrojet cleaning and CCTV monitoring of approximately 11 miles of gravity mainline. Additionally, the City performs smoke testing of approximately 1,500 feet of mainline for areas suspected of high I&I. Hydraulic modeling was completed for the design of the Regional Pipeline and ongoing evaluations will be conducted as described in section 5 of the COJA between the City and Placer County. Currently identified CIP projects and costs for the City's collection system are listed in **Appendix 2.** Ongoing evaluation is constrained by budget and staff resources. Staff will continue the system evaluation as budget and staffing is available.

## Section 8.4 Conclusion

As noted in the plan description, a system evaluation is an ongoing task and must allow for scheduling changes and budget limitations. The City will continue to perform these tasks as needed and review goals and objectives during the annual audit provided for in Element 10 of this SSMP.

# Element IX. Monitoring, Measurement and Program Modifications

## Section 9.1 Overview

The General Waste Discharge Requirements (GWDR) require the enrollee (City) to implement the following monitoring, measurement and program modifications:

- Maintain relevant information that can be used to establish and prioritize appropriate Sewer System Management Plan (SSMP) activities;
- Monitor the implementation and where appropriate, measure the effectiveness of each element of the SSMP;
- Assess the success of the preventative maintenance program;
- Update program elements, as appropriate, based on monitoring or performance; and
- Identify and illustrate sanitary sewer overflows (SSO) trends, including frequency, location and volume.

## Section 9.2 Mapping

The City has implemented Geographic Information System (GIS) mapping of all of the sewer system components including pipe, manholes, flushing branches, force mains and pump stations. The nodes/points are at survey level accuracy and data can be queried for ID #, pipe size and other characteristics.

The system is electronically available to field staff via laptop computers and on the City's intranet server. In addition, data was gathered for water and storm drain layers and "as built" plans information is incorporated into the GIS systems map.

The Wastewater field staff has been provided with hand held GPS devices that are approximately one (1) meter accuracy for locating manholes and documenting SSO's with the State Board 's California Integrated Water Quality System CIWQS electronic reporting requirements.

The City's GIS map is essential for implementing and assessing the success of the preventative maintenance program and the SSMP. It is used to prioritize preventive maintenance activities based on known hotspots, and problem areas.

## Section 9.3 Measuring

The Public Works Operations Manager and the Wastewater Division staff use the various forms for documenting service requests as an assessment tool. Some of these forms include Work Orders (Exhibit 4-2), the Emergency Sewer Call Reports (Exhibit 9-3), the Close-Circuit Television (CCTV) Inspections Form (Exhibit 9-4), the Hydroflushing Log (Exhibit 9-5), the Manhole Inspections Form (Exhibit 9-6); and the Sanitary Sewer Overflows Form (Exhibit 9-7).

Pump Station Supervisory Control and Data Acquisition (SCADA) reports provide wet and dry peak flow tracking and can be utilized to develop trends and spot inflow and infiltration (I&I) sources as depicted in Exhibits 9-8, and 9-9.

Flowmeters and samplers are also utilized to examine specific waste streams for pollutants and illegal discharges related to industrial and commercial fats, oils and grease (FOG).

## Section 9.4 Monitoring

The Public Works Operations Manager periodically reviews response time for wastewater calls, prints reports from the Computer Maintenance Management System (CCMS), and reviews work progress of the Public Works Wastewater Division staff.

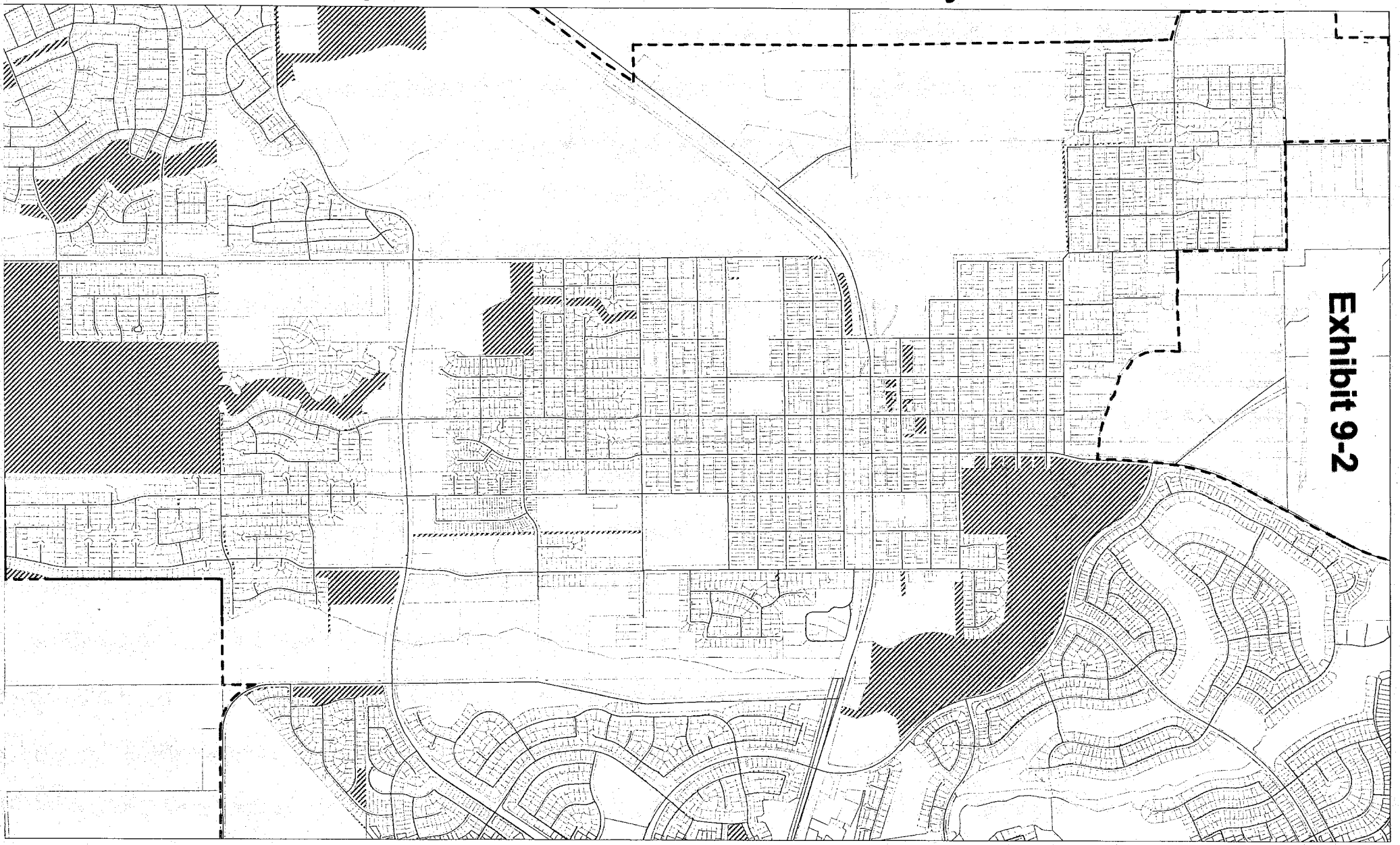
Some areas that are monitored are pump station SCADA reports, efficiency of cleaning and CCTV. Comparison of established bench marks for daily and specific tasks is ongoing.

## Section 9.5 Conclusion

Monitoring, measurement and program modification is an important component of the SSMP to implement a successful program. The annual audit (Section 10 of this SSMP) will address all the areas that must be monitored and their cost effectiveness.

# Exhibit 9-2

# City of Lincoln wastewater system




SCALE 1 : 19,378

1,000 0 1,000 2,000 3,000

FEET

N

http://lincoln.facilitiesmap.com/mwf/map_base.mwf

Thursday, July 16, 2009 1:51 PM

# Exhibit 9-3

**Exhibit 9-3**

# Sewer Emergency Call Out Report

## City of Lincoln

Notification Date: 7-13-09 Time: 4:30pm By: Doyle

Reported By: Name: FRANK

Address: 957 Holt

Telephone:

Problem Location: Resident's clean-out in the alley.

Responded By: Time: 4:50pm Date: 7-13-09 Person: Tom Andrews

Work Performed: Ran clean-out 5ft, Ran main line 450 ft.

Work Completed By: Time: 6:30pm Date: 7-13-09

Follow up Recommended: TV clean-out

| Equipment usage: | Time Used: |
|---|---|
| Vactor | 2.0 hrs. |
| Man Hours Name: Tom Andrews | 2.0 hrs. |
| | |
| | |
| | |

Signed: Tom Andrews

Approved By:

# Exhibit 9-4

# Exhibit 9-4

Setup #1 — **TELEVISION INSPECTION FORM** — Tape 2

1. INSPECTION CREW: Matt/Tom DATE: 9/26/94 BASIN#
2. UPSTREAM MANHOLE: 3 DOWNSTREAM MANHOLE: 4 ADDRESS: 623 Darlington

**SETUP**

3. TV DIRECTION ..... | 1 | 1-UP → DOWN 2-DOWN → UP
4. SURFACE TYPE ..... | 2 | 1-OPN LND 2-PVD ONLY 3-PVD&UNPVD 4-FRNT RT-OF-WAY 5-REAR ESMT 6-ALLY PVD 7-ALLY UNPVD
5. PURPOSE ..... | 1 | 1-TV EXISTING LINE 2-TV NEW LINE 3-TV REHABILITATED LINE
6. WEATHER ..... | 1 | 1-SUNNY 2-CLOUDY 3-RAINNY
7. FLOW ..... | 3 | 1-NORMAL FLOW 2-ADDED FLOW 3-NO FLOW|
8. TAPE ID ..... | 2 | RUN# ..... | 1 |
9. MAINT. PRIOR TO TV ... | | CLEANED | | KNIFED | | DEGREASER | | ROOT TREAT. | | POINT REP. | | MH REP. | ✓ | N/O
10. PIPE SHAPE ..... | 1 | 1-ROUND 2-ELLIPTICAL 3-BOX 4-DOUBLE BOX 5-TRIPLE BOX 6-HORSESHOE
11. DIAMETER/HEIGHT(IN) | | WIDTH(IN) ... | |
12. MATERIAL ..... | 4 | 1-VCP 2-PVC 3-CONCRETE 4-RCP 5-DIP 6-CIP 7-CMP 8-TILE 9-BRICK 10-ORANGE BERG

| OB # | FOOT. | LOC. | DEFECT | RATING* | INFLT (GPM)** | COMMENTS |
|---|---|---|---|---|---|---|
| 1 | 0 | | | | | START OF RUN |
| 2 | 10 | | | 1 | | Crack |
| 3 | 17.6 | | | 3 | | Crack Moisture |
| 4 | 24.1 | | | 2 | | Crack |
| 5 | 31.5 | | | 2 | | Crack @ Grouted Joint |
| 6 | 36 | 2 | | 3 | | Hole |
| 7 | 39 | | | 2 | | Moisture |
| 8 | 46.9 | | | 3 | | Multi Cracks w/ Moisture |
| 9 | 58.7 | 3 | | 2 | | Crack Moisture / Spalling |
| 10 | 62.5 | | | 3 | | Crack Moisture |
| 11 | 69.5 | | | 3 | | Crack |
| 12 | 76.3 | | | 3 | | Crack Moisture Spalling |
| 13 | 79.3 | | | 3 | | Crack moisture |
| 14 | 83.6 | | | 2 | | Crack |
| 15 | 85 | | | 3 | | Crack Moisture Spalling |
| 16 | 92 | | | 3 | | Crack Moisture |
| 17 | 97 | | | 2 | | Crack |
| 18 | 107 | | | 2 | | Crack |
| 19 | 114.2 | | | 3 | | Crack Spalling moisture |
| 20 | 116 | | | 3 | | Crack |

* REFER TO RATINGS MANUAL | | Additional observations attached

** ENTER INFILTRATION RATE ONLY IF ACTUAL LEAKAGE IS OBSERVED

**CODES**

**LOCATION**
1. US MANHOLE
2. DS MANHOLE
3. CAMERA BLOCKED
4. JOINT
5. WYE SERVICE
6. BREAK-IN CONN.
7. EXTENDED TAP
8. RIGHT TAP
9. LEFT TAP
10. CROWN
11. INVERT
12. CAMERA SUBMERGED
13. CAMERA EMERGED
14. OTHER

**DEFECT**
1. CRACK – RADIAL
2. CRACK - HORIZONTAL
3. BROKEN PIPE
4. COLLAPSED PIPE
5. WYE SERVICE
6. BREAK – IN CONN.
7. EXTENDED TAP
8. OFFSET
9. GAPPED JOINT
10. ROOTS
11. DEBRIS
12. GREASE
13. CORROSION
14. SCALING
15. SAG
16. INFILTRATION
17. NEW MANHOLE
18. OTHER
19. CAMERA SUBMERGED
20. CAMERA BLOCKED
31. PIPE SEAL

**SUMMARY**

16. OVERALL CONDITIONS ..... | 2 | 1-GOOD 2-FAIR 3-POOR 4-VERY POOR

| WORK # | TASK | ASSIGNED TO | COMPLETED | COMMENT |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

COMMENTS

# Exhibit 9-4

1. INSPECTION CREW: DATE:____/____/____ BASIN #

2. UPSTREAM MANHOLE: DOWNSTREAM MANHOLE: LOCATION:

## ADDITIONAL OBSERVATIONS

| OB # | FOOT. | LOC. | DEFECT | RATING* | INFLT (GPM)** | COMMENTS |
|---|---|---|---|---|---|---|
| 21 | 120 | | | 2 | | Crack |
| 22 | 137 | | | 3 | | Crack moisture |
| 23 | 145 | | | 2 | | Cracks |
| 24 | 153.3 | | | 2 | | Crack; chipped edges |
| 25 | 155 | | | 3 | | Multi-Cracks |
| 26 | 161 | | | 3 | | Crack |
| 27 | 164 | | | 3 | | Crack |
| 28 | 167.3 | | - | | | END INSPECT |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |
| 34 | | | | | | |
| 35 | | | | | | |
| 36 | | | | | | |
| 37 | | | | | | |
| 38 | | | | | | |
| 39 | | | | | | |
| 40 | | | | | | |

**CODES**

**LOCATION**
1. US MANHOLE
2. DS MANHOLE
3. CAMERA BLOCKED
4. JOINT
5. WYE SERVICE
6. BREAK-IN CONN
7. EXTENDED TAP
8. RIGHT TAP
9. LEFT TAP
10. CROWN
11. INVERT
12. CAMERA SUBMERGED
13. CAMERA EMERGED
14. OTHER

**DEFECT**
1. CRACK – RADIAL
2. CRACK – HORIZONTAL
3. BROKEN PIPE
4. COLLAPSED PIPE
5. WYE SERVICE
6. BREAK – IN CONN.
7. EXTENDED TAP
8. OFFSET
9. GAPPED JOINT
10. ROOTS
11. DEVRIS
12. GREASE
13. CORROSION
14. SCALING
15. SAG
16. INFILTRATION
17. NEW MANHOLE
18. OTHER
19. CAMERA SUBMERGED
20. CAMERA BLOCKED
31. PIPE SEAL

* REFER TO RATINGS MANUAL

____ Additional observations attached

** ENTER INFILTRATION RATE ONLY IF ACTUAL LEAKAGE IS OBSERVED

# Exhibit 9-5

3300 gallons of water

Tom Andrews

Cleaning Log

City of Lincoln

DATE: 6-10-09

| Street Name | From MH # | To MH # | Pipe Size | Pipe Type | Length in Ft. | Problems | WATER |
|---|---|---|---|---|---|---|---|
| 6th ST Between D & C ST South | 31 | 31A | 6" | clay | 400' | 6" to 12" BAD OFF SET HARD TO GET OVER SPOT | 800 |
| 6th ST | 30 | 31 | 6" | clay | 360' | | 400 |
| 6th ST Between E & D ST | 30 | END C/O | 6" | clay | 395' | | 400 |
| AT E ST ON 6th ST | 29 | 30 | 6" | clay | 160' | OUTSIDE DROP NEEDS TO BE FIX (LOOSE) | 200 |
| Alley of Mc Bean Between A & B | 16 | END C/O | 6" | clay | 405' | | 600 |
| Mc Bean Park DR. | 16 | 17 | 8" | clay | 385' | | 400 |
| Mc Bean Park DR. | 15 | 16 | 8" | clay | 385' | | 400 |
| INTO Park | 15 | END C/O | 6" | clay | 408' | LINE SUPPOSELY 140' IFY ABOUT Flushing that far | 100 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

2530 feet flushed

Exhibit 9-5

# Exhibit 9-6

# Exhibit 9-6

## MANHOLE INSPECTION FORM

↑NE5225503

1. INSPECTION CREW: Thomas Andrews DATE 3 / 23 / 06 MANHOLE #: 1004

2. GEN. LOCATION: E. 11th ST. Alley Between Herold & Wilson GAS METER READINGS 02____ CO____ LEL____ H2S____

3. ADDRESS: 360 E. 11th ST PRIORITY: ____ 1-LOW 2-MODERATE 3-HIGH 4-IMPORTANT 5-EMERGENCY

| OBSERVATION | | CODE NO. | CODE |
|---|---|---|---|
| 4. INSPECTION TYPE | | 2 | 1–INTERNAL 2–SURFACE 3–NOT INSPECTED 4–BURIED 5–NOT FOUND |
| 5. STRUCTURE TYPE | | 1 | 1-STND 2-CLN OUT |
| 6. LOCATION | | 1 | 1–STREET 2–ALLEY 3–SDWLK 4–DRVWY 5–PKWY 6-GRASS 7-STORM DITCH |
| 7. SURFACE TYPE | | 1 | 1-ASPHALT 2-CONCRETE 3-GRAVEL 4-DIRT/GRASS |
| 8. COVER | A. TYPE | 1 | 1-PICK 2-CONCEALED PICK 3-GASKETED 4-VENTED 5-STORM 6-BOLT DOWN |
| | B. FIT | 1 | 1-GOOD 2-TIGHT 3-LOOSE 4-ROCKING 5-BOLTS MISSING 6-GASKET BAD/GONE |
| | C. # OF HOLES | 1 | |
| | D. PONDING DEPTH (IN) | 0 | |
| | E. PONDING TYPE | — | 1-SHEET FLOW 2-LOW POINT |
| | F. GRADE +/- (IN) | | |
| | G. SIZE | 1-25 | 1-25 2-48 3-END C/O |
| | H. RAIN CAP | 1 | 1-NO 2-YES |
| 9. FRAME | A. OFFSET (IN) | | |
| | B. RISER HEIGHT (IN) | | 1" 4" 7" |
| 10. GRADE ADJ. | A. TYPE | | 1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED |
| | B. DEPTH (IN) | | |
| | C. MIN. DIA. (IN) | | |
| 11. CONE/TOP | A. TYPE | 5 | 1-NONE 2-PRECST 3-BRK 4-BLK 5-PORD 6-BRK&CON 7-CLAY 8-PVC |
| | B. SHAPE | 1 | 1-CONCENTRIC 2-ECCENTRIC 3-FLAT TOP |
| 12. WALL | A. MATERIAL | 5 | 1-NONE 2-PRECST 3-BRK 4-BLK 5-PORD 6-BRK&CON 7-CLAY 8-PVC |
| | B. LINING TYPE | | 1-CEMENTITIOUS 2-CAST-IN-PLACE 3-CURED-IN-PLACE 4-EPOXY |
| 13. BENCH TYPE | | 5 | 1-NONE 2-PRECAST 3-BRICK 4-BLOCK 5-POURED |
| 14. TROUGH TYPE | | 5 | 1-NONE 2-PRECAST 3-BRICK 4-VCP 5-POURED 6-PVC |
| 15. STEPS | | 1 | 1-YES 2-NO |
| 16. MANHOLE DEPTH (FT) | | 6' | FROM THE CROWN OF THE PIPE |
| 17. EVIDENCE OF SURCHARGE (FT) | | 0 | 0-NO 1-YES |

| DEFECTS | FLOW CODE | OBS. (GPM) | BROKEN S | BROKEN D | CORROSION S | CORROSION D | ROOTS S | ROOTS D | I/I CODE | NUMBER OF HOLES | NUMBER OF CRACKS | NUMBER OF JOINTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18. COVER | | | | | | | | | | | | |
| 19. FRAME | | | | | | | | | | | | |
| 20. FRAME SEAL | | | | | | | | | | | | |
| 21. GRADE ADJUSTMENT | | | | | | | | | | | | |
| 22. CONE | | | | | | | | | | | | |
| 23. WALL | | | | | | | | | | | | |
| 24. BENCH | | | | | | | | | | | | |
| 25. TROUGH | | | | | | | | | | | | |

| FLOW CODE | SEVERITY CODE | DENSITY CODE | I/I CODE |
|---|---|---|---|
| 1 – LIGHT | 1 – MILD | 1 - <10% | 1 - INFLOW |
| 2 – MODERATE | 2 – MODERATE | 2 – 10% - 25% | 2 - INFILTRATION |
| 3 – HEAVY | 3 – SEVERE | 3 – 25% - 50% | |
| | | 4 - >50% | |

ROLL NUMBER(S): ____

PICTURE NUMBER(S): 3

COMMENTS: ____

**Exhibit 9-6**

# Exhibit 9-7

**Exhibit 9-7**

City of Lincoln

# WASTEWATER SPILL REPORT

DATE: **07/02/07** REPORT # **03** OES # **07- 3968**

TIME CALL RECEIVED 1515 (0100--2400) LOCATION First & J Streets

CALL RECEIVED BY Mary Bushnell CALLERS NAME Jim Sipos

CALLERS ADDRESS 1615 5th Street CALLERS PHONE NUMBER 434-2503

---

FIRST RESPONDER **Fred Jackson and Tom Andrews** TIME ARRIVED ON SITE **1530** (0100-2400)

TIME SPILL BEGAN **Unknown @ this time** TIME SPILL WAS STOPPED 1730

ESTIMATED OVERFLOW VOLUME **1000** GALS WEATHER **CLEAR**

U/S MANHOLE NW458SS12 D/S MANHOLE n/a PIPE #

CREW PERSONS INVOLVED IN CLEANUP:

Danny Bisiar, Tom Andrews, Matt Reynolds, Dennis Walker, Joseph Almeda, Brian Button, Tony Rivers

DID SPILL EXCEED 1,000 GALS --- **Y** / N DID IT REACH SURFACE WATERS--**Y** / N

**WERE SAMPLES TAKEN --Y/N LOCATIONS OF SAMPLES**
Sample #1: 100' upstream of point of discharge; Sample #2: Point of discharge; Sample #3: 100' downstream of discharge; Sample #4: Joiner Bridge

---

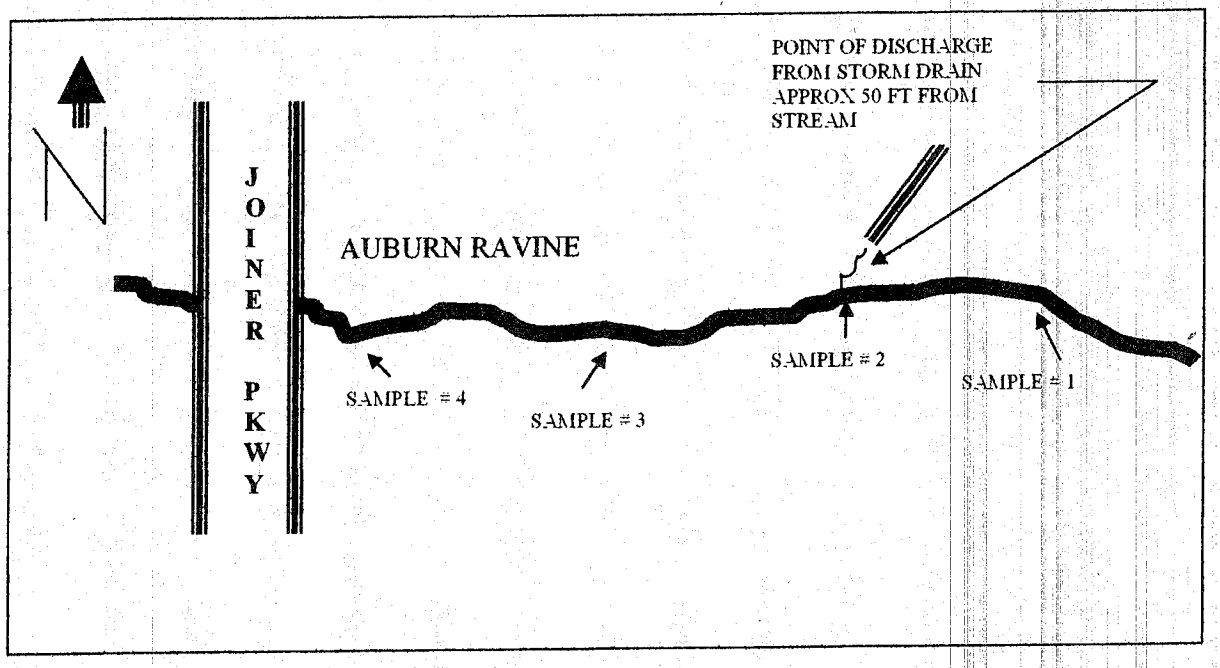
**DESCRIPTION AND CAUSE OF EVENT** :
Approximately 1,000 gallons entered storm drain and combined with storm sewer discharge into Auburn Ravine. A 6" VCP sewer main hardpiped through storm drain manhole collapsed allowing flow to combine with storm sewer

**AGENCIES/PERSONS CONTACTED:**
Office Of Emergency Services; South Sutter Water District, Brad Arnold; and State Regional Water Quality Control Board, Patricia Leary (left voice mail message) & Linda Rose (personally)

# Exhibit 9-7

**DESCRIPTION OF AREA OF DISCHARGE :**
Auburn Ravine appears to have moderate to high flow. Stream is approx 40' wide, 2' deep with no apparent effects of contamination or environmental damage.

**SKETCH OF AREA**




**MITIGATION AND CLEANUP ACTIONS** :
An inflatable plug was placed on the outfall side of the storm sewer manhole to isolate flow and sandbags were placed on the inflow side of the manhole. Directed flow back into sewer line by use of sandbags.

**ADDITIONAL WORK TO BE PERFORMED** :
City to repair/replace sewer line in manhole and reroute sewer to prevent future cross connection point .

REPORT SUBMITTED BY **D. BISIAR** DATE **07/02/07**

CONTACT # **(916) 434-3765** E-MAIL **dchamplain@ci.lincoln.ca.us**

**PHOTOGRAPHS AND SAMPLES**

To be provided at a later date.

# Element X. Sewer System Management Plan (SSMP) Audit

## Section 10.1 Overview

The purpose of this Sewer System Management Plan (SSMP) Audit is to evaluate the effectiveness of the City's SSMP, to identify deficiencies, if any, and steps to correct deficiencies. The audit is a critical element of the SSMP to ensure its effectiveness and allow for updates in practices, policies and procedures based on best management practices (BMPs).

As part of this Audit each element of the SSMP is reviewed and a determination made if it is meeting the goals established and compliance with General Waste Discharge Requirements (GWDR) 2006-003 Order. The Audit shall be performed at least every other year and shall be available to the public for review if requested.

The SSMP audit template and completed audit records are in **Appendix 4**.

# Element XI. Communication Program

## Section 11.1 Overview

This describes the communications plan that the City uses to communicate the key messages of the Sewer System Management Plan (SSMP) to the stakeholders. The stakeholders include the City Council, City of Lincoln ratepayers and regulatory agencies including the State Water Resources Control Board (SWRCB.)

Included in this plan is a description of the benefits and objectives of the communications plan, a listing of the key messages to be delivered, and the communications methods to be used to deliver the key messages to the stakeholders.

Many aspects of the SSMP require the approval or cooperation from stakeholders. The City Council must certify the program. The program requires funding, and ratepayers can be required to approve rate increases to pay for the program(s) and improvements being made. Residents and businesses are also asked to cooperate with the fats oil, and grease (FOG) control and other efforts to reduce sanitary sewer overflows (SSO's).

- Good communications promote cooperation from stakeholders and will make it easier to implement the City's SSMP policies and complete goals;
- Communications is the key to elected officials and the public's acceptance of an SSMP program and the key to obtaining the funds to develop and implement that program; and
- A communications plan is required by the General Waste Discharge Requirements (GWDR) and is intended to provide an opportunity for interested stakeholder to give input to the City's SSMP during audits, workshops or other forums.

## Section 11.2 Objective

The communications plan has the following objectives:

- To communicate with enough frequency and information so that the SSMP is supported by the City Council, the ratepayers, and other agencies;
- To inform internal and external stakeholders of strategies to reduce SSO's; and
- To inform the City Council and the ratepayers of ongoing work and successes with the SSMP implementation and goals.

## Section 11.3 The Key Messages

For the SSMP the key messages focus on the actions taken by the City to reduce the number and volume of SSO's. This includes the achievement of stated goals and improved cost effective operations.

The following key messages are conveyed to the public:

- The SSMP protects property and the environment to include the water quality of the region;
- Wastewater collection system improvements are continually needed to replace existing infrastructure and to construct new infrastructure;
- Wastewater collection systems that are properly operated, maintained and consistently improved will reduce the risk of SSO's;
- The City has adopted a process of continuous improvement to reduce SSO's; and
- Adequately maintaining the system of sewer pipes and pump stations is critical to homeowners and businesses in the area served.

## Section 11.4 Methods and Strategy for Communication

It is critical to monitor and measure the effectiveness of the communication strategy on an ongoing basis. With good communication, the public should be more willing to accept the program and/or elected officials will be more willing to provide funds for the program over public protest.

Communication with the stakeholders happens in several ways as shown below:

- Press Release;
- Public Hearing;
- Information on the City's website;

- A copy of the SSMP at the Public Works front counter;
- Reports that summarize how the Agency has performed in completing preventive maintenance activities that have led to a reduction in SSO's; and
- Presentations to the City Council on the status of SSMP implementation and progress in reducing SSO's in the system.

## Section 11.5 Communications with City Council

The Public Works management and Wastewater Division staff provide periodic reports to the City Council as strategies are implemented and goals are achieved. Staff also make periodic reports on the success of the Operations and Maintenance Program on meeting performance measures related to SSO reduction. These may include progress on line cleaning and closed circuit television (CCTV) inspection activities, completion of spot repairs to fix hot spots, root control measures, FOG control measures, and response times to reduce the quantity of spills and improve customer satisfaction.

## Section 11.6 Communications with the Ratepayers

The City provides a copy of the most current SSMP on the public website.

## Section 11.7 Communications with Other Agencies

The City has a plan for communications with the State and regional regulatory agencies. Reports to the regional board address the number and size of SSO's, the causes for SSO's, and what specific steps are being taken to reduce SSO's using the California Integrated Water Quality System (CIWQS) database reporting method.
The City may choose to exchange information on SSO reduction measures and the SSMP implementation. This is not a requirement of the GWDR Order, but may be helpful in developing "best management practices (BMPs)" with review and discussion with other neighboring agencies and also to develop mutual aid agreements for emergency response where possible.

Exhibit 11-1 depicts the communication needs, method and actions.

## Exhibit 11-1 – Communication Needs, Methods and Actions

| Stakeholder | Areas of Interest | Method/action | Who | Timeline |
|---|---|---|---|---|
| City Council | Environmental Stewardship | Council information updates and workshops | Management | Annually or as needed |
| | Rates and fees | Briefings and workshops with Council | Management | Annually or as needed |
| | SSO Performance Targets | Briefings to the Council , City Manager and Department heads | Operations Staff | As needed |
| | Policies | City website, Municipal code and administrative policies, briefings Program Web Site | Management | Annually or as needed |
| | Ordinances | Council mtgs,briefings | Management | Annually or as needed |
| Ratepayers | SSO's | Program Web Site | Management and | Semi Annually or as needed |
| | Feedback to SSO Reduction process | Public Education brochures and utility inserts | Operations Staff | |
| | Service levels and targets | | | |
| | Rates and fees | | | |
| <u>Other Agencies</u> | | | | |
| Regional Board or State Board | Number and Volume of SSO's, Causes of SSO's | CIWQS database<br>Spill reports and mitigation actions | Operations Staff | Monthly or as needed |
| Other Contributing Agencies | Sharing of Resources | Support during large events | Operations and Maintenance Staff | Seasonal or emergency event |

# Appendix 1: City of Lincoln Sewer Ordinance

CHAPTER 13.08 - SEWAGE FACILITY REGULATIONS

Article I. - Definitions

13.08.010 - Applicability of article.

Unless the context specifically indicates otherwise, the meaning of terms used in this chapter shall be as set out in this article.

*(Ord. 314B Art. I (part), 1976)*

13.08.020 - Applicant.

"Applicant" means the owner or the agent of the owner of the property for which sewer service is being requested.

*(Ord. 314B §101, 1976)*

13.08.030 - B.O.D.

"B.O.D." (denoting biochemical oxygen demand) means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five days at 20 degrees Celsius.

*(Ord. 314B §102, 1976)*

13.08.040 - Building drain.

"Building drain" means that part of the lowest piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning two feet outside the building wall.

*(Ord. 314B §103, 1976)*

13.08.050 - Building sewer.

"Building sewer" means that part of the horizontal piping of a drainage system which extends from the end of the building drain and which receives the discharge of the building drain and conveys it to a public sewer, private sewer, individual sewage-disposal system or other point of disposal.

*(Ord. 314B §104, 1976)*

13.08.060 - City inspector.

"City inspector" means the employee of the city designated as the inspector of sewer service, or his authorized representative.

*(Ord. 314B §105, 1976)*

13.08.070 - Combined sewer.

"Combined sewer" means a public sewer which is designed to carry both sanitary and storm flows.

*(Ord. 314B §106, 1976)*

13.08.080 - Commercial service.

"Commercial service" means provision of sewer service to any structure, facility or premises which is neither residential or industrial in character and which is used for business, trade, manufacturing or processing activities. "Commercial service" includes hotels, motels, rest homes, schools and all other service not otherwise defined as "domestic service" or "industrial service."

*(Ord. 314B §107, 1976)*

13.08.090 - Domestic service.

"Domestic service" means provision of sewer service for household residential purposes to either single-family or multiple-family dwelling units.

*(Ord. 314B §108, 1976)*

13.08.100 - Garbage.

"Garbage" means solid wastes from the domestic and commercial preparation, cooking and dispensing of food, and from the handling, storage and sale of produce.

*(Ord. 314B §109, 1976)*

13.08.110 - Industrial service.

"Industrial service" means provision of sewer service to any structure, premises or facility used for manufacturing, processing or similar industrial uses, and shall include all uses permitted only within an industrial zone by the zoning ordinance, except residential and commercial uses.

*(Ord. 314B §110, 1976)*

13.08.120 - Industrial wastes.

"Industrial wastes" means the liquid wastes from industrial processes as distinct from sanitary sewage.

*(Ord. 314B §111, 1976)*

13.08.130 - Mains.

"Mains" means collection pipelines located in streets, highways, public ways or private rights-of-way which are used to serve the general public.

*(Ord. 314B §112, 1976)*

13.08.140 - Natural outlet.

"Natural outlet" means any outlet into a watercourse, ditch, pond, lake or other body of surface water or groundwater.

*(Ord. 314B §113, 1976)*

13.08.150 - Person.

"Person" means any individual, firm, company, association, society, partnership, corporation, organization or group.

*(Ord. 314B §114, 1976)*

13.08.160 - pH.

"pH" means the logarithm of the reciprocal of the hydrogen-ion concentration in grams per liter of

solution.

*(Ord. 314B §115, 1976)*

13.08.170 - Premises.

"Premises" means buildings, establishments, parcels of land or lots which are improved and benefited by drainage, or the integral property or area, including improvements thereon, to which sewer service is or will be provided.

*(Ord. 314B §116, 1976)*

13.08.180 - Properly shredded garbage.

"Properly shredded garbage" means the wastes from the preparation, cooking and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch in any dimension.

*(Ord. 314B §117, 1976)*

13.08.190 - Public sewer.

"Public sewer" means any sewer which is controlled by the city or other public agency operating a sanitary sewer within the city.

*(Ord. 314B §118, 1976)*

13.08.200 - Sanitary sewage.

"Sanitary sewage" means any waste discharging into the sewage system and which contains human or animal excreta, offal or any feculent matter.

*(Ord. 314B §119, 1976)*

13.08.210 - Sanitary sewer.

"Sanitary sewer" means any sewer which carries sanitary sewage or industrial wastes, and to which storm waters, surface waters and groundwaters are not intentionally admitted.

*(Ord. 314B §120, 1976)*

13.08.220 - Service connection.

"Service connection" means the pipe or other conduit by means of which sewage is conducted from the premises to a main.

*(Ord. 314B §121, 1976)*

13.08.230 - Sewage.

"Sewage" means a combination of the water-carried wastes from residences, business buildings, institutions and industrial establishments, together with such groundwaters, surface waters and storm waters as may be present.

*(Ord. 314B §122, 1976)*

13.08.240 - Sewage facilities.

"Sewage facilities" means all facilities for collecting, pumping, treating and disposing of sewage,

whether public or private.

*(Ord. 314B §123, 1976)*

13.08.250 - Sewage treatment plant.

"Sewage treatment plant" means any arrangement of devices and structures used for the treatment of sewage.

*(Ord. 314B §124, 1976)*

13.08.260 - Sewer.

"Sewer" means a pipe or conduit for carrying sewage.

*(Ord. 314B §125, 1976)*

13.08.270 - Storm drain.

"Storm drain" means a pipe or conduit for carrying the runoff from storm and surface drainage.

*(Ord. 314B §126, 1976)*

13.08.280 - Suspended solids.

"Suspended solids" means solids that either float on the surface of, or are in suspension in, water, sewage or other liquids, and which are removable by laboratory filtration, expressed in milligrams per liter.

*(Ord. 314B §127, 1976)*

13.08.290 - Watercourse.

"Watercourse" means a channel in which a flow of water, either groundwater or surface water, occurs, either continuously or intermittently.

*(Ord. 314B §128, 1976)*

Article II. - Use of Public Sewers

13.08.300 - Plumbing code applicability.

The provisions of the Uniform Plumbing Code, 1973 Edition, as adopted by reference by the city, or the provisions or any subsequent edition of the Uniform Plumbing Code adopted by the city, shall apply unless otherwise specified in this chapter.

*(Ord. 314B §201, 1976)*

13.08.310 - Connection to proximate sewer required.

Notwithstanding any other provision of this chapter, every building in which plumbing fixtures are installed and every premises having drainage piping thereon shall have a connection to a public sewer, provided that a sewer main is located 200 feet or less from the building or drainage facility.

*(Ord. 314B §202, 1976)*

13.08.315 - Continued use of private sewer system.

Property owners using private sewer systems that are in compliance with applicable codes and regulations may continue to use the private system when new public sewer systems are constructed within 200 feet or less from the building or drainage facility. The construction or installation of a public sewer system will not cause property owners to abandon their private sewer systems.

*(Ord. No. 888B, § 3, 11-12-2013)*

13.08.320 - Deposit of waste.

It is unlawful for any person to place, deposit or permit to be placed or deposited upon public or private property within the city any garbage, refuse, sewage or waste, except as provided by this chapter or applicable ordinances.

*(Ord. 314B §203, 1976)*

13.08.330 - Discharge of polluted waters to natural outlet.

No person shall discharge or cause to be discharged to any natural outlet any garbage, sewage, industrial wastes or other polluted waters unless suitable treatment has been provided and approved by the city inspector.

*(Ord. 314B §204, 1976)*

13.08.340 - Unpolluted waters—Discharge to sanitary sewer.

No person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof runoff, subsurface drainage, cooling water or unpolluted industrial process waters to any sanitary sewer.

*(Ord. 314B §205, 1976)*

13.08.350 - Unpolluted waters—Proper discharge—Interceptor maintenance.

Storm waters and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as combined sewers or storm sewers, or to a natural outlet approved by the city inspector. Industrial cooling water or unpolluted process waters may be discharged, upon approval of the city inspector, to a storm sewer, combined sewer or natural outlet. Where installed, all grease, oil and sand interceptors shall be maintained by the owner, at his expense, in continuously efficient operation at all times.

*(Ord. 314B §206, 1976)*

13.08.360 - Discharges prohibited without permit.

No person shall discharge or cause to be discharged to a public sewer within the city any of the following-described substances, materials, waters or wastes without first obtaining a written permit issued by the city inspector:

(1) Any water or waste which contains more than 100 milligrams per liter of fat, oil or grease. The limitation of hexane-soluble materials shall not apply to those wastewaters from industries processing fats and oils of vegetable or animal origin for which the industry supplies, at its own expense, satisfactory evidence that the wastewaters are transportable in the sewers without causing obstructions to flow;

(2) Any waters or wastes containing strong acid iron pickling wastes, or concentrated plating

solutions, whether neutralized or not;

(3) Any waters or wastes having a pH in excess of 9.5 or lower than 5.5;

(4) Any waters or wastes containing suspended solids in excess of 300 parts per million by weight, or of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant.

*(Ord. 314B §207, 1976)*

13.08.370 - Grease, oil and sand interceptors.

Grease, oil and sand interceptors shall be provided when, in the opinion of the city inspector, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand or other harmful ingredients; except, that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the city inspector, and shall be located so as to be readily and easily accessible for cleaning and inspection.

**Cross reference—** For provisions on the maintenance and operation of grease, oil and sand interceptors, see Section 13.08.350 of this code.

*(Ord. 314B §208, 1976)*

13.08.380 - Control manhole, instruments, tests and logs required when.

When required by the city inspector, the owner of any property derived by a building sewer carrying industrial waste shall install a suitable control manhole together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling and measurement of the waste. Tests and logs of tests may be required of the industry and shall be made available to the city. Such manhole, when required, shall be safely located, and shall be constructed in accordance with plans approved by the city inspector. The manhole shall be installed by the owner at his expense, and shall be maintained by him so as to be safe at all times. In addition, the manhole shall be readily accessible during working hours by request to the owner or his representative.

*(Ord. 420B §2 (part), 1982: Ord. 314B §209(part), 1976)*

13.08.390 - Sewer meters required when.

All building permits and construction permits for the construction of commercial or industrial facilities shall be conditioned upon the installation of a sewer meter. Such meter shall be located and constructed in accordance with plans approved by the city inspector and shall be installed by the owner at his expense, and maintained by him so as to be safe at all times.

*(Ord. 420B §2(part), 1982: Ord. 314B §209(part), 1976)*

13.08.400 - Preliminary treatment facilities required when.

The admission into a public sewer of any waters or wastes having:

(1) A five-day B.O.D. greater than 300 parts per million by weight; or

(2) Containing more than 300 parts per million by weight of suspended solids; or

(3) Containing any quantity of substances having the characteristics described in Section 13.08.360; or

(4)

Having an average daily flow greater than one percent of the average daily flow of the city; shall be subject to the review and approval of the city engineer. Where necessary, in the opinion of the city engineer, the owner shall provide at his expense such preliminary treatment as may be necessary to reduce the B.O.D. or the suspended solids to levels provided in this chapter, to reduce objectionable characteristics or constituents to the limits provided in this chapter, or to control the quantities and rates of discharge of such waters or wastes. Plans, specifications and any other pertinent information relating to proposed preliminary treatment facilities shall be submitted for approval by the city inspector and the California Regional Water Quality Control Board, Central Valley Region, and no construction of such preliminary treatment facility shall be commenced until such approvals have been obtained in writing. Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.

*(Ord. 314B §210, 1976)*

13.08.410 - Measurement, test and analysis methodology.

All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in this chapter shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, and shall be determined at the control manhole provided, or upon suitable samples taken at the control manhole. In the even that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected. Sampling shall be carried out by customarily accepted methods to reflect the effect of constituents upon the sewage works and to determine the existence of hazards to life, limb and property.

*(Ord. 314B §211, 1976)*

13.08.420 - Agreement to accept wastes not prohibited.

No provision of this chapter shall be construed to prevent the city from entering into an agreement with any discharger of industrial waste which exceeds the characteristics and limitations set forth in this chapter, upon payment by such discharger of such costs as may be determined by the city to be sufficient to provide for the receipt and treatment of such wastes.

*(Ord. 314B §212, 1976)*

Article III. - Private Sewers

13.08.430 - Connection to approved private system required when.

When no public sewer is available as provided in this chapter, drainage piping from any building or facility shall be connected to an approved private sewage disposal system complying with the provisions of the Uniform Plumbing Code and the provisions of this chapter.

*(Ord. 314B §301, 1976)*

13.08.440 - Permit required—Application—Fee.

Before commencement of construction of a private sewage-disposal system, the owner shall first obtain a written permit signed by the city inspector. The application for such permit shall be made on a form furnished by the city, which the applicant shall supplement by any plans, specifications and other

information deemed necessary by the city inspector. A fee established by resolution of the city council shall be paid to the city treasurer at the time the application is filed for the purpose of defraying the cost of plan checks and inspection of the work.

*(Ord. 412B §10(5)(part), 1982; Ord. 322B §1, 1977: Ord. 314B §302, 1976)*

13.08.450 - Inspections.

A permit for a private sewage disposal system shall not become effective until the installation is completed to the satisfaction of the city inspector. He shall be allowed to inspect the work at any state of construction and, in any event, the applicant for the permit shall notify the city inspector when the work is ready for final inspection, and before any underground portions are covered.

*(Ord. 314B §303, 1976)*

13.08.460 - County health recommendations apply—Area for soil absorption—Septic tank or cesspool discharge.

The type, capacities, location and layout of a private sewage disposal system shall comply with all recommendations of the county health department. No permit shall be issued for any private sewage disposal system employing subsurface soil absorption facilities where the area is less than 15,000 square feet. No septic tank or cesspool shall be permitted to discharge to any public sewer or natural outlet.

*(Ord. 314B §304, 1976)*

13.08.470 - Connection to available public sewer.

At such time as a public sewer becomes available to a property served by a private sewage disposal system, as provided in Section 13.08.310, a direct connection shall be made to the public sewer in compliance with this chapter, and any septic tanks, cesspools and similar private sewage disposal facilities shall be abandoned and filled with suitable material.

*(Ord. 314B §305, 1976)*

13.08.480 - Sanitary operation and maintenance.

The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times, at no expense to the city.

*(Ord. 314B §306, 1976)*

13.08.490 - Lines serving two or more structures.

Private sanitary sewer lines servicing two or more buildings or structures located on the same lot, when such lines are not maintained by the city, shall be constructed to meet the standards for construction of public sewer lines.

*(Ord. 314B §307, 1976)*

13.08.500 - Private storm sewers.

Private storm sewers which are not maintained by the city shall be constructed in accordance with standard specifications for public storm sewers.

*(Ord. 314B §308, 1976)*

Article IV. - Building Sewers and Connections

13.08.510 - Permit—Required.

No person shall use, alter, connect to, uncover or discharge into any public sewer or appurtenance thereof without first obtaining a written permit from the city inspector.

*(Ord. 314B §401, 1976)*

13.08.520 - Permit—Classes—Application—Fee.

There shall be two classes of building sewer permits: (A) for residential and commercial service, and (B) for service to establishments producing industrial wastes. In either case, the owner or his agent shall make application on a special form furnished by the city. The permit application shall be supplemented by such plans, specifications or other information required by the city inspector. In addition to the connection charges imposed by Chapter 13.12, a fee established by resolution of the city council shall be paid to the city treasurer for a building sewer permit at the time application is filed, to defray the cost of plan checks and inspection of the work.

*(Ord. 412B §10(5)(part), 1982; Ord. 322B §2, 1977: Ord. 314B §402, 1976)*

13.08.525 - Expiration of permit.

Every building sewer permit issued by the city inspector under the provisions of Article IV shall expire by limitation and become null and void if the building or work authorized by such permit is not commenced within 180 days from the date of such permit, or if the building or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days. Before such work can be recommenced, a new building sewer permit shall first be obtained so to do, and the fee therefor shall be the amount required for a new permit for such work with a credit being given for any fees previously paid to the city for the original building sewer permit. A credit for fees previously paid will be granted provided no changes have been made or will be made in the original plans and specifications for such work; and provided further that any failure to commence, suspension or abandonment of work has not exceeded one year.

*(Ord. 501B §3, 1988)*

13.08.530 - Owner to bear costs and liability.

All costs and expense incident to the installation and connection of the building sewer to the building drain and public sewer shall be borne by the property owner. The owner shall indemnify and hold harmless the city from and against any loss or damage that may directly or indirectly result by the installation or connection of the building sewer by city employees.

*(Ord. 314B §403, 1976)*

13.08.540 - Existing sewers.

No existing sewer may be used by any building or facility constructed after the effective date of the ordinance codified in this chapter unless the sewer is determined by the city inspector to comply with the provisions of this chapter.

*(Ord. 314B §404, 1976)*

13.08.550 - Materials, size and slope.

Building sewer materials shall be approved by the city inspector. The size and slope of the building sewer shall be subject to the approval of the city inspector, but in no event shall the diameter be less than four inches. The slope of such four-inch pipe shall be not less than one-quarter inch per foot. The slope of building sewers six inches and larger shall be not less than one-eighth inch per foot.

*(Ord. 314B §405, 1976)*

13.08.560 - Depth, course, grade and fittings.

Whenever possible the building sewer shall be brought to the building at an elevation below the basement floor. No building sewer shall be laid parallel to or within three feet of any bearing wall which might thereby be weakened. The depth shall be sufficient to afford protection from frost. The building sewer shall be laid at a uniform grade and in straight alignment in so far as possible. Changes in direction shall be made only with properly curved pipe and fittings.

*(Ord. 314B §406, 1976)*

13.08.570 - Lift means.

In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such drain shall be lifted by approved artificial means and discharged to the building sewer.

*(Ord. 314B §407, 1976)*

13.08.580 - Pipelaying and backfill.

Pipelaying and backfill shall be subject to the approval of the city inspector. Building sewer piping shall be laid on a firm bed throughout its entire length. No backfill shall be placed until after the work has been inspected.

*(Ord. 314B §408, 1976)*

13.08.590 - Connection—Specifications.

(a) Connections of building sewers to a public sewer shall be made by the city upon the payment of a connection fee as established by ordinance. The connection of the building sewer into the public sewer shall be made at the "Y" branch, if such branch is available at a suitable location.

(b) If the public sewer is 12 inches in diameter or less, and no properly located "Y" branch is available, the city shall at the owner's expense install a "Y" branch in the public sewer at the location specified by the city inspector.

(c) Where the public sewer is greater than 12 inches in diameter, and no properly located "Y" branch is available, a neat hole may be cut into the public sewer to receive the building sewer, with entry in the downstream direction at an angle of about 45 degrees. A 45-degree "L" may be used to make such connection, so that the spigot end does not extend past the inner surface of the public sewer.

(d) The invert of the building sewer at the point of connection shall be at the same or at a higher elevation than the invert of the public sewer. A smooth, neat joint shall be made, and the connection made secure and watertight by encasement in concrete. Special fittings may be used for the connection only when approved by the city inspector.

*(Ord. 314B §409, 1976)*

13.08.600 - Connection—Supervision by city.

The applicant for the building sewer permit shall notify the city inspector when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the city inspector, or his representative.

*(Ord. 314B §410, 1976)*

13.08.610 - Excavation safety measures—Restoration of public property.

All excavations for building sewer installations shall be adequately protected in accordance with applicable law and regulations. Streets, sidewalks, parkways and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the city.

*(Ord. 314B §411, 1976)*

Article V. - Inspections, Appeals and Penalties

13.08.620 - Right of entry—Conduct of inspector.

(a) The city inspector or any other duly authorized employee of the city may enter any public or private property at reasonable times for the purpose of inspection, observation, measurement, sampling and testing in accordance with the provisions of this chapter; provided, that if such property is occupied, he shall first present proper credentials and shall request entry; if such building or premises are unoccupied he shall first make a reasonable effort to locate the owner or other persons having charge or control of the building or premises and request entry. If such entry is refused, the city inspector, or other duly authorized employee of the city, shall have recourse to every remedy provided by law to secure entry.

(b) When the city inspector, or other duly authorized employee of the city, has first obtained a proper inspection warrant, no owner or occupant or any other person having charge, care or control of any building, premises or property shall fail or neglect, after proper request is made, to permit entry by the city inspector, or the duly authorized employee of the city, for the purposes of inspection, observation, measurement, sampling and testing in accordance with the provisions of this chapter.

(c) The city inspector, or other duly authorized employee, shall observe all safety rules applicable to the premises during his inspection, observation, measurement, sampling and testing.

*(Ord. 412B §8, 1982: Ord. 314B §501, 1976)*

13.08.630 - Appeal—Right.

Any person adversely and directly affected by any determination made by the city inspector or any other officer or employee of the city pursuant to the provisions of this chapter may appeal the determination to the city council.

*(Ord. 314B §505, 1976)*

13.08.640 - Appeal—Filing notice.

The notice of appeal must be filed with the city clerk not later than 15 days following the determination of the city inspector or 15 days following the date when the appellant is informed of the determination appealed, whichever is the last to occur. The notice of appeal shall specify the basis of the appeal and only grounds mentioned therein shall be considered by the council.

*(Ord. 314B §506, 1976)*

13.08.650 - Appeal—Hearing scheduling and notice.

Within ten days of receipt of the appeal, the city clerk shall transmit it to the council with the request that it be set for hearing. The city council shall thereafter set the matter for hearing within 30 days of the date on which it receives the appeal and shall instruct the clerk to give the appellant written notice of the time, date and place of the hearing by mailing notice thereof to the address of the appellant as shown in the notice of appeal.

*(Ord. 314B §507, 1976)*

13.08.660 - Appeal—Hearing.

At the time of the hearing, the council shall consider all testimony and evidence presented which is relevant to the subject of the appeal and shall within 15 days thereafter affirm, modify or reverse the determination of the city inspector.

*(Ord. 314B §508, 1976)*

13.08.670 - Appeal—Stay of subject determination.

Any appeal filed pursuant to this chapter shall stay the determination of the city inspector; provided, however, that the filing of the appeal shall not stay any determination; made by the city inspector and the determination shall remain in full force and effect unless and until modified or reversed by the city council.

*(Ord. 314B §509, 1976)*

13.08.680 - Violation—Misdemeanor.

A violation of any provision of this chapter shall be a misdemeanor and subject to the penalties provided by law.

*(Ord. 314B §502, 1976)*

13.08.690 - Violation—Restraint or abatement action.

In addition to any other remedy provided by law, the city attorney may institute appropriate actions or procedures in a court of competent jurisdiction to restrain or abate any violations of the provisions of this chapter as a public nuisance.

*(Ord. 314B §503, 1976)*

13.08.700 - Violation—Disconnection.

(a) In addition to all of the remedies provided in this ordinance, discharge of prohibited waters or wastes shall result in disconnection of the premises from the public sewer.

(b) Prior to such discontinuance of service the owner of the real property to which the service was rendered shall be served with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof.

(c) When service has been disconnected as provided in this ordinance, city inspector may require that the person requesting that such service be reestablished furnish a bond in the sum of $500.00 payable to the city and conditional upon compliance with the provisions of this ordinance, before granting permission to make such connection. The person making application for such reestablishment of service shall pay all expenses incurred by the city in causing such disconnection and reconnection before such permission may be granted.

*(Ord. 314B § 504, 1976)*

# Appendix 2: City of Lincoln Capital Improvement Projects

# City of Lincoln-CAPITAL IMPROVEMENT PROJECT STATUS

| Project | CIP No. | FY 2015-2016 Budget | Location/Description | Project Status | Responsible Manager |
|---|---|---|---|---|---|
| **Park Projects** | | | | | |
| **Robert "Chief" Jimenez Community Park** | **334** | **$1,000,000** | Robert "Chief" Jimenez Community Park | Engineering design through Dec 2015. | Alan Mitchell |
| **Nathan Dubin Park** | **351** | **$2,000,000** | Nathan Dubin Park | Engineering design through Dec 2015. | Alan Mitchell |
| **Parks Capital Replacement** | **368** | **$150,000** | Citywide | July 2015: No action taken to date. | Marc Fernandez |
| **Park and Landscape Improvements** | **369** | **$100,000** | Citywide | No action taken to date. | Marc Fernandez |
| | | | | | |
| **Street Projects** | | | | | |
| **Street Resurfacing** | **124** | **$395,000** | Twelve Bridges and Lincoln Hills | No action taken to date. | Marc Fernandez |
| **Sidewalk Replacement Program** | **127** | **$60,000** | Citywide | Ongoing maintenance/repair as needed. | Travis Williams |
| **Auburn Ravine Bridge Replacement @ Lincoln Blvd** | **352** | **$37,852** | Auburn Ravine Bridge at Lincoln Blvd. | Preliminary Grant approval Application | Alan Mitchell |
| **Auburn Ravine Bridge Replacement @ McBean Park Drive** | **353** | **$600,000** | Auburn Ravine Bridge at McBean Park Dr. | Preliminary Engineering 30% Design by Dec 2015 | Ray Leftwich |
| **Lincoln Blvd Improvements** | **362** | **$3,410,206** | Phase 1 - McBean Park Dr. to 7th Street | Phase 1 Construction through October 2015 | Ray Leftwich (Phase 1) and Araceli Cazarez |
| **East 9th Street Improvements** | **362** | **$100,000** | East 9th Street from East Ave. to Harrison Ave. | Base mapping underway and will be followed by geotech investigation. | Araceli Cazarez |
| **Safe Routes to School** | **364** | **$486,296** | East Avenue and East Joiner South of 12 Bridges | Review by Caltrans | Ray Leftwich |
| **Twelve Bridges Dr and Joiner Pkwy Slurry Seal** | **375** | **$218,546** | Twelve Bridges Dr. from Industrial to Sierra College and Joiner Pkwy from City limits to 1st St. | RFP sent to consultants | Marc Fernandez |
| **Ferrari Ranch Road Median Landscape Improvements** | **376** | **$350,000** | Ferrari Ranch Rd from Groveland Ln. to Caledon Ln. | Contract awarded | Marc Fernandez |
| | | | | | |
| **Water Projects** | | | | | |
| **Water Distribution System Rehabilitation** | **135** | **$345,000** | Citywide | Engineering Design | John Griffin |
| **30-inch PCWA Pipeline (Phase III)** | **307** | **$300,000** | Southeasterly City Limit between Fuente Place and Conspiracy Point reservoir | Engineering design | Dane Schilling |
| **NID Water Treatment Plant** | **308** | **$200,000** | Northeast of City | No action taken to date | Ray Leftwich |
| **36-inch Pipeline to Twelve Bridges** | **345** | **$1,000,000** | Twelve Bridges at Catta Verdera | No action taken to date | Ray Leftwich |
| **Cathodic Protection** | **366** | **$100,000** | Westwood Well | Engineering Design | John Griffin |
| **10 MG Storage Tank at City Pond Site** | **377** | **$4,000,000** | Twelve Bridges at Catta Verdera | No action taken to date | Ray Leftwich |

| Project | CIP No. | FY 2015-2016 Budget | Location/Description | Project Status | Responsible Manager |
|---|---|---|---|---|---|
| | | | | | |
| **Wastewater Projects** | | | | | |
| **Chambers Dr Sewer/Nicolaus Rd PS FM Impr** | **300-02/03** | **$2,000,000** | Chambers Drive, Moore Rd and Waverly Dr. | Punch list items remaining includes epoxy of manholes | Araceli Cazarez |
| **Demolition of Old WWTP PS** | **300-04** | **$150,000** | Old WWTP Site | Contract Award approved at August 11th Council Meeting | Araceli Cazarez |
| **Ph 1 Reclamation Improvements** | **300-05** | **$3,500,000** | WWTRF, Moore Rd and Joiner Pkwy | Construction through November 2015 | Araceli Cazarez |
| **Sewer Collection System & Pipe Rehabilitation** | **302** | **$120,000** | Citywide | Engineering Design | John Griffin |
| **Regional Sewer Program Management** | **Fund 726** | -- | Placer County | In construction 60% Complete. Anticipate to be finished by Dec. | Ray Leftwich |
| | | | | | |
| **Drainage Projects** | | | | | |
| **Storm Drain Repair and Replacement** | **337** | **$100,000** | 4th and L Streets | Engineering Design | Travis Williams |
| | | | | | |
| **Airport Projects** | | | | | |
| **Automatic Entrance Security Gates (ACIP #2 & #5)** | **337** | **$26,000** | Airport | Not included in FY 15/16 ACIP | Ray Leftwich |
| **Crack Seal - Runway, Taxiway and Apron (ACIP#1)** | **338** | **$643,000** | Airport | Design is ongoing. | Ray Leftwich |
| **Rehabilitate Runway Safety Areas (ACIP#3 & #4)** | **339** | **$57,500** | Runway 15-33 | Maintenance Project at Engineering Level. FAA Process. | Ray Leftwich |
| **Pavement Main/Mgmt Update (ACIP#5)** | **370** | **$65,000** | Airport | Engineering Design | Ray Leftwich/Jennifer Hanson |
| | | | | | |
| **Public Facilities Projects** | | | | | |
| **McBean Pavilion Improvements** | **358** | **$150,000** | McBean Pavilion Men's Restroom | Construction through September 2015 | Araceli Cazarez |
| **Twelve Bridges Library Improvements** | **373** | **$225,000** | Twelve Bridges Library | Construction through August 2015 | Marc Fernandez |
| | | | | | |
| **Solid Waste Projects** | | | | | |
| **Closed Landfill** | **349** | **$3,000,000** | City Landfill | Construction through December 2015 | Travis Williams |
| | | | | | |

# Appendix 3: SSO Volume Calculation Methods

# Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

## *Method 1: Eyeball Estimate*

The volume of small spills can be estimated using an "eyeball estimate". To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains five gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

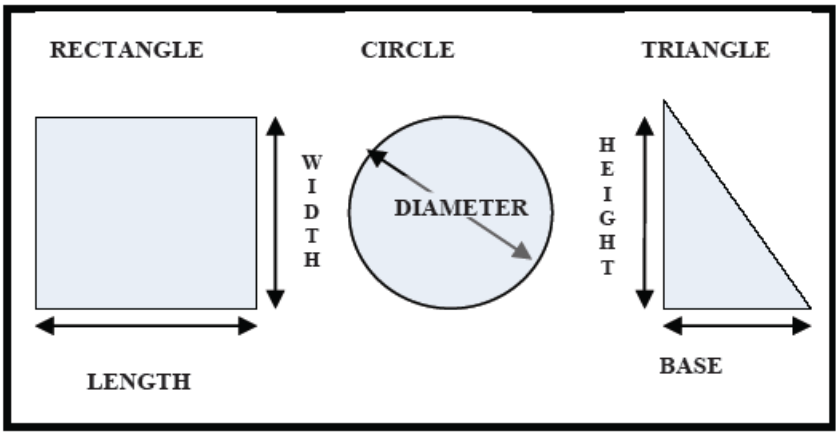
## *Method 2: Measured Volume*

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Step 1 Sketch the shape of the contained sewage (see Figure A).
Step 2 Measure or pace off the dimensions.
Step 3 Measure the depth at several locations and select an average.
Step 4 Convert the dimensions, including depth, to feet.
Step 5 Calculate the area in square feet using the following formulas:
Rectangle: Area = length (feet) x width (feet)
Circle: Area = diameter (feet) x diameter (feet) x 0.785
Triangle: Area = base (feet) x height (feet) x 0.5

Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.
Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons.

**Figure A: Common Shapes and Dimensions used for Estimating Spill Size**




## *Method 3: Duration and Flow Rate*

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, separate estimates are made of the duration of the spill and the flow rate. The methods of estimating duration and flow rate are:

### *Duration*

The duration is the elapsed time from the time the spill started to the time that the flow was restored.

***Start time:*** The start time is sometimes difficult to establish. Here are a few approaches:

- Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
- Conditions at the spill site change over time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. From a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process.
- It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case, the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to

peak flows (in excess of capacity) will occur only during, and for a short period after, heavy rainfall.

***End time:*** The end time is usually much easier to establish. On-site field crews observe the "blow down" that occurs when the blockage has been removed.

## *Flow Rate*

The flow rate is the average flow that left the sewer system during the time of the spill. Two common ways to estimate the flow rate are described below:

***1. San Diego Manhole Flow Rate Chart:*** This chart, on page C-4, shows sewage flowing from manhole covers at a variety of flow rates. The observations of the field crew can be used to select the appropriate flow rate from the chart. If possible, photographs are useful in documenting the basis for the flow rate estimate.

***2. Counting Connections:*** Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or eight to ten gallons per hour per connection.

For example:

22 upstream connections x 9 gallons per hour per connection
= 198 gallons per hour ÷ 60 minutes per hour
= 3.3 gallons per minute

## *Spill Volume*

Once duration and flow rate have been estimated, the volume of the spill is the product of the duration (in hours or days) and the flow rate (in gallons per hour or gallons per day).

For example:

Spill Start Time = 11:00
Spill End Time = 14:00
Spill Duration = 3 hours
3.3 gallons per minute x 3 hours x 60 minutes per hour = 594 gallons

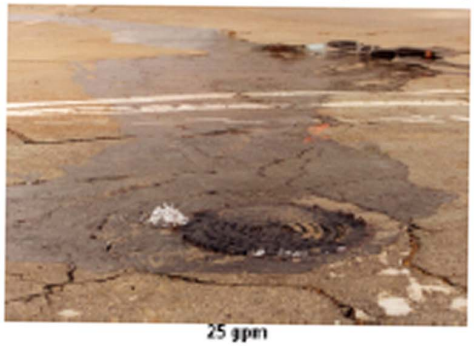
City of San Diego
Metropolitan Wastewater Department

# Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

*All estimates are calculated in gallons per minute (gpm)*

Wastewater Collection Division
(619) 654-4160

5 gpm



25 gpm

50 gpm

100 gpm

150 gpm

200 gpm

225 gpm

250 gpm

275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/93

# Appendix 4: Audit Records

## Sewer System Management Plan (SSMP) Audit

**Directions**: Please check **YES** or **NO** for each question. If **NO** is answered for any question, describe the updates/changes needed and the timeline to complete those changes in the "Description of Scheduled Updates/Changes to the SSMP" section on Page 5 of this form.

| | | YES | NO |
|---|---|---|---|
| **ELEMENT 1 – GOALS** | | | |
| A. | Are the goals stated in the SSMP still appropriate and accurate? | ☐ | ☐ |
| | | | |
| **ELEMENT 2 -- ORGANIZATION** | | | |
| A. | Is the Public Works Services Key Staff Telephone List current? | ☐ | ☐ |
| B. | Is the Sanitary Sewer Overflow Responder Telephone List current? | ☐ | ☐ |
| C. | Is the organizational chart current? | ☐ | ☐ |
| D. | Are the position descriptions and accurate portrayal of staff responsibilities? | ☐ | ☐ |
| E. | Is Exhibit 2-1 of the SSMP, titled "Chain of Communication for Reporting and Responding to SSOs," accurate and up-to-date? | ☐ | ☐ |
| | | | |
| **ELEMENT 3 – LEGAL AUTHORITY** | | | |
| Does the SSMP contain excerpts from the current City Municipal Code documenting the City's legal authority to: | | | |
| A. | Prevent illicit discharges? | ☐ | ☐ |
| B. | Require proper design and construction of sewers and connections? | ☐ | ☐ |
| C. | Ensure access for maintenance, inspection or repairs for portions of the lateral owned or maintained by the City? | ☐ | ☐ |
| D. | Limit discharges of fats, oil and grease (FOG)? | ☐ | ☐ |
| E. | Enforce any violation of its sewer use ordinances? | ☐ | ☐ |
| | | | |
| **ELEMENT 4 – OPERATIONS AND MAINTENANCE** | | | |
| | **Collection System Maps** | | |
| A. | Does the SSMP reference the current process and procedures for maintaining the City's wastewater collection system maps? | ☐ | ☐ |
| B. | Are the City's wastewater collection system maps complete, current, and sufficiently detailed? | ☐ | ☐ |

| | | | |
|---|---|---|---|
| | **Resources and Budget** | | |
| C. | Does the City allocate sufficient funds for the effective staffing, operation, maintenance and repair of the wastewater collection system? | ☐ | ☐ |
| | **Prioritized Preventive Maintenance** | | |
| D. | Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewer lines? | ☐ | ☐ |
| E. | Based upon information gathered on sewer system overflows, complaint calls, CCTV and cleaning reports, are the City's preventive maintenance activities sufficient and effective in minimizing SSOs and blockages? | ☐ | ☐ |
| | **Scheduled Inspections and Condition Assessments** | | |
| F. | Is there an ongoing condition assessment program sufficient to develop a capital improvement plan addressing the proper management and protection of infrastructure assets? Are the current components of this program documented in the SSMP? | ☐ | ☐ |
| | **Contingency Equipment and Replacement Inventory** | | |
| G. | Does the SSMP list the major equipment currently used in the operation and maintenance of the collection system and document the procedures of inventory management? | ☐ | ☐ |
| H. | Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance? | ☐ | ☐ |
| | **Training** | | |
| I. | Is the necessary training provided and budgeted for to include continuing education and certification? | ☐ | ☐ |
| J. | Does the SSMP document describe current training expectations and programs within the City's Wastewater Division? | ☐ | ☐ |
| | **Outreach to Plumbers and Building Contractors** | | |
| K. | Does the SSMP document current outreach efforts to plumbers and building contractors? | ☐ | ☐ |
| | | | |
| | | **YES** | **NO** |
| **ELEMENT 5 – DESIGN AND PERFORMANCE STANDARDS** | | | |
| A. | Does the SSMP contain current design and construction standards for the installation of new sanitary sewer systems, pump stations; and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems? | ☐ | ☐ |
| B. | Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines? | ☐ | ☐ |
| | | | |
| **ELEMENT 6 – OVERFLOW AND EMERGENCY RESPONSE PLAN** | | | |
| A. | Does the City's Sanitary Sewer Overflow Response Plan establish procedures for the emergency response, notification, and reporting of sanitary sewer overflows (SSOs)? | ☐ | ☐ |
| B. | Is there adequate staffing of trained personnel in the wastewater division to respond promptly and appropriately to emergencies and to carry out the procedures of the Sanitary Sewer Overflow Response Plan? | ☐ | ☐ |
| C. | Considering performance indicator data in the Annual SSO Report, is the Sanitary Sewer Overflow Response Plan effective in handling SSOs in order to safeguard public health and the environment? | ☐ | ☐ |
| | | | |
| **ELEMENT 7 – FATS, OILS, AND GREASE (FOG) CONTROL PROGRAM** | | | |
| A. | Does the Fats, Oils, and Grease (FOG) Control Program include efforts to educate the public on the proper handling and disposal of FOG? | ☐ | ☐ |

| | | | |
|---|---|---|---|
| B. | Does the City's FOG Control Program identify sections of the collection system subject to FOG blockages, establish a cleaning schedule and address source control measures to minimize these blockages? | ☐ | ☐ |
| C. | Are requirements for grease removal devices, best management practices (BMP), record keeping and reporting established in the City's FOG Control Program? | ☐ | ☐ |
| D. | Does the City have sufficient legal authority to implement and enforce the FOG Control Program? | ☐ | ☐ |
| E. | Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system? | ☐ | ☐ |
| | | | |
| **ELEMENT 8 – SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN** | | | |
| A. | Does the City's Capital Improvement Program evaluate hydraulic deficiencies in the system, establish sufficient design criteria and recommend both short and long term capacity enhancement and improvement projects? | ☐ | ☐ |
| B. | Does the City's Capital Improvement Program establish a schedule of approximate completion dates for both short and long-term improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment? | ☐ | ☐ |
| | | **YES** | **NO** |
| **ELEMENT 9 – MONITORING, MEASUREMENT AND PROGRAM MODIFICATIONS** | | | |
| A. | Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators? | ☐ | ☐ |
| B. | Is the City able to sufficiently evaluate the effectiveness of SSMP elements based on relevant information? | ☐ | ☐ |
| **ELEMENT 10 – SSMP AUDITS** | | | |
| A. | Will the SSMP Audit be completed in a timely manner with thorough review by staff and available to the public by September of this year? | ☐ | ☐ |
| | | | |
| **ELEMENT 11 – COMMUNICATION PROGRAM** | | | |
| A. | Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and its goals? | ☐ | ☐ |

## Description of Scheduled Updates/Changes to the SSMP

**Directions:** For each NO answer, please describe the planned revision and indicate the date the revision will be completed. Reference the SSMP element and question number with each explanation.

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